Textile World

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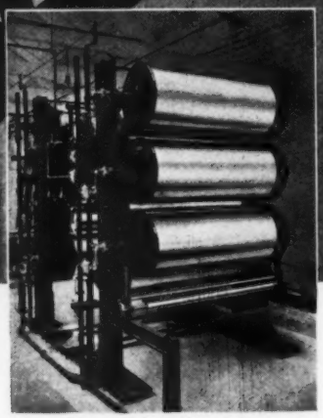

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Textile World

JUNE, 1939

DOUGLAS G. WOOLF, *Editor*

Tomorrow Always Comes

ON Flushing Meadow, Grover Whalen—he of the villainous mustache and the white gardenia—has built the World of Tomorrow. Buried in that world—and when we say buried, we mean buried—are the Textiles of Tomorrow. For it takes a detective to uncover the textiles in the show. And that is just what two TEXTILE WORLD editors and a TEXTILE WORLD photographer have tried to do. (See page 79.)

Every time we visit the Fair, we have a sense of deep shame when we look at what was to be the Textile Building. It's a swell building—one of the best in the Fair. At night, its color is exquisite. And yet, it is used mainly for photographing the mugs of visitors with 20-trip tickets. As the Hall of Special Events, it may house some special events. But it's *not* a Textile Building—and presumably never will be. On Petticoat Lane, flanking the erstwhile Textile Building, is a sculpture "Textiles"—pictured on the front cover of this issue. Today it has a hollow ring.

Is not that a symbol of what is wrong with the textile industry? Granted that the initial "selling" period of the Fair coincided neatly with the collapse in the textile markets, this is at best not much more than an alibi. The truth is that the industry as a whole is still a long way from being promotion-minded. And so, it was quite in character when it passed up one of the greatest promotional tie-ups in years.

The textile companies which have their own representation at the Fair are headed by individuals who have long held the torch of promotion, even against the chill breeze of industry indifference. If they carry it long enough, they may eventually have a following.

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But speed is required—or—it may be too late.

Here's a sample of the sort of press release that makes our blood run cold: The Scott Paper Co. has just made plans for appointing additional coast-to-coast distributors for its year-old ScotTissue Towel Service Division, in view of the rapid progress the division made during the last year. The company states that it organized the department, *as a result of a persistent consumer demand*, "to supply a complete, deluxe, modern, sanitary, flexible tissue towel service on a monthly basis to small towel users in manufacturing and general offices, retail stores and to professional men and women."

The company adds that at that time it was conservatively estimated that the national potential of small towel users was "*a vast unexploited source of business, with a market as high as approximately $70,000,000 a year.*"

Some optimist may say: "Oh, well that's just towels." But it's happening in practically all textile products. Competitive waves are beating in from other industries, and are making deeper inroads each year.

Paper is one of the toughest competitors. We have referred in these columns to the complete line of paper household products created by one company and sold house-to-house. Its appeal was good enough to break down the sales resistance of even the textile-conscious wife of a textile editor.

•

That's the kind of merchandising the textile industry has got to do. And it must concentrate first on holding some of its old markets which are rapidly crumbling under the competition from other materials.

We have all the sympathy in the world for exploitation of new uses—cotton bags, cotton roads, or what have you—but we feel that too often the promotion of existing outlets is neglected. Those are considered "in the bag." That's a huge mistake. Just because a man or woman has used a textile for a certain purpose in the past is no assurance that he or she will continue to do so, particularly against the pressure of finely-assorted, attractively-packaged merchandise of another material, brought to the front door.

National Cotton Week is a step in the right direction. But what the textile industry needs is a National Cotton Week state of mind every week in the year, in all its branches, and in all the individual manufacturing units. Maybe it also needs a Fuller Brush Man.

Non-believers might go out to the Fair and see what other industries are doing. They might look at the Glass Center, for instance. This writer has a hunch that the more aggressive promotional effort noted in the glass industry today is partly the result of meeting the challenge which the can hurled at the bottle as a container.

If all our industry needs is a challenge, it certainly has a fine collection of them right now. And most of them have got to be met. Or else the World of Tomorrow will be tough scratching for the Textile Men of Today.

THE EDITOR SAYS

We Stick Our Neck Out Again

AMERICAN business certainly felt better at the end of May than it did at the end of April. And as we write this, it seems probable that this sentiment will continue at least until this page comes off the press.—H. a. M. w. (Which means "Hitler and Mussolini willing," of course.)

The better tone has been noticed primarily in the stock and commodity markets. It has derived largely from the easing of tension in the world situation.

Actually, nothing has changed. Europe is still a tinder-box. However, there seems to be less eagerness on the part of the dictator States to strike the spark. For one thing, the coalition of the opposition has progressed rapidly in recent weeks; for another, preparedness programs of the leading countries in the opposition group are approaching what might be termed a stage of at least initial completion; and finally there is some reason to believe that the older and fiercer of the two Wild Men of Europe doesn't feel quite comfortable about all the steps taken by the younger and funnier one.

At any rate, for the moment there is peace of a sort, and no crisis pending for 11.57 A.M. tomorrow.

* * *

The result in this country has been a temptation to resume the forward march of business which was all ready to go at the first of the year. Never before have we seen such a healthy boomlet smothered so suddenly and so effectively. It just couldn't survive the European jitters. And no one could blame it for that.

Can it be revived sufficiently to produce a good last half-year? That's the question in the mind of all businessmen today. At the moment, the probabilities seem on the positive side.

Where will textiles fit into the picture? That's even more difficult to answer. Starting with the middle of 1938, textiles have had a good record from the *production* standpoint. Cotton consumption, for example, was 16% greater during the first nine months of the cotton year ending this April 30 than during the corresponding period of the previous cotton year. Production of rayon yarn set a new high record for the first quarter of this year, and was 42% above that for the first quarter of last year. First-quarter output of wool goods in 1939 was 55% above that for the first quarter of 1938. Silk deliveries for the same period were 8% higher than last year.

Despite that high rate of production, there is no reason why textile mills can not find a basis for continued operation on a good scale for the balance of the year if general business broadens.

The one serious factor is the price problem. It is not too much to say that the price levels of recent months in print cloths, for example, have been ruinous. The fact that some mills have closed down in recent weeks rather than continue to operate at those prices, is eloquent testimony. It's also smart business.

Other branches of the industry have not had so serious a price problem—but in most divisions manufacturing margins are inadequate for anything like a fair return to the investor.

All analyses of the textile situation nowadays inevitably lead down this one alley. In the past it has been a dead-end street. Just now, as we noted in these columns last month, we feel that some progress is being made toward finding a way out. The support given the proposed print cloth stabilization plan is a sample of the reasons for our optimism.

And so, for the last half of 1939, we hazard the guess that general business will be on the up-grade; and that textiles will share in the improvement, if production and price policies are watched carefully.

H. a. M. w., to repeat.

Public Relations Honor Roll

◆ So far as is known, Pequot Mills hold the record of having conducted the first bedmaking contest for men. Seven contestants, prominent in business and the professions, included Lew Lahr, Phil Baker, Gelett Burgess, Salvador Dali, Lester Gaba, Milton J. Cross and Frankie Masters. The contest took place in the ball-room of the Warwick Hotel, New York. First prize went to Milton J. Cross . . . . We almost forgot to mention that, by a strange coincidence, Pequot sheets were used in the contest.

◆ Pacific Mills once more gave important help to the city of Lawrence in fighting a recent fire in the mercantile district. The company supplied four hose lines from its own fire pumps. The help given in this and previous fires has been greatly appreciated by Lawrence authorities.

◆ Both Bliss Fabyan & Co. and Botany Worsted Mills have established bureaus to supply New York World's Fair information and help to their customers and other friends.

◆ Thirty employees of the Rock Hill (S. C.) Printing and Finishing Co. will receive free trips to the New York World's Fair as prizes in a plant-wide contest. The prizes will be awarded on several different bases.

◆ A special exhibit and fashion show of Pepperell products and fabrics, for the employees in the Pepperell Mfg. Co.'s plant in Biddeford, Maine, was scheduled to be held in that city June 10. It was planned to illustrate to the employees the broad activities of the company, the type of cloth made and sold, and the garments and articles into which the cloth is manufactured.

◆ Louisville (Ky.) Textiles, Inc., continue to send out a series of brochures to the trade—which rank high among the promotional material crossing our desk.

◆ Four Rockingham (N.C.) Mills—Hannah Pickett Mills, Entwistle Mfg. Co., Pee Dee Mfg. Co. and Steele's Mills—ran a full-page advertisement in the Richmond County Journal, published in Rockingham, cooperating in National Cotton Week observance. The advertisement urged citizens of the county to call for their sugar purchases to be packed in cotton bags instead of paper sacks—and gave these reasons:

"One bale of cotton gives 218 hours to a share-cropper; making this cotton into 2,270 yards of cloth gives 126 hours of work to a textile mill operative; making this cloth into 13,600 5 pound sugar bags gives 106 hours of work to a bag factory employee."

WORLD'S FAIR REPRINTS

READERS desiring reprints of the New York World's Fair Section (beginning on page 79) may obtain them without charge by writing to TEXTILE WORLD, 330 West 42d St., New York.

Incidentally, the colors in which that section is printed, as well as those on the front cover of this issue, approximate the official colors of the Fair.

NEWS OF THE MONTH

A Real Cotton Week

A fitting prologue to National Cotton Week, May 22 to 27, was the glamorous presentation of "high fashion" cottons at the New York World's Fair May 20. This out-of-doors spectacle drew a crowd in excess of 5,000. Typical cotton weather prevailed.

More than 75,000 retail establishments participated in the week's promotion. An investment in excess of $2,500,000 was indicated in the drive. Communities throughout the country, and particularly in the cotton-growing section, participated. Radio salutes to Cotton Week were an important feature.

National Cotton Week was emphasized as an important aid in the solution of the cotton surplus problem, by Charles K. Everett, head of the New Uses Section of the Cotton-Textile Institute, in an address before the Washington Advertising Club.

Export Subsidy May Win Yet

(From Textile World's Washington Office)

Although opposition is strong, opinion in Washington is that the President has sufficient influence to put his cotton export plan through Congress. The big question is: How much money can he get to put it into substantial effect? As this is written, a conference committee is considering an Agriculture appropriation of $113,000,000 under Sect. 2 of the Act of 1938. About $90,000,000 will be available under Sect. 2 from general import duties. Of the total, $203,000,000, no more than 25%, or about $50,000,000 could be used to subsidize export cotton. Economy converts on the Hill are making even New Deal money hard to get. Processing taxes to finance farm benefits seem definitely out.

Since last fall, Secretary Wallace has changed his mind about export, because, he says, conditions have changed. At that time there were only 7,000,000 bales of cotton in the loan, and exports were moving. It did not seem that the 8.3c loan would interfere with this movement. But now there is so much cotton in Government hock that very little is free to move in export channels. It appears, says Wallace, that if we are to keep the loan, action must be taken to offset its effect on export.

But suppose the Wallace-Roosevelt-farm team wins, and strong subsidy support is forthcoming. That still does not guarantee satisfactory results, say students of the problem. In the long run, all cotton-growing countries would be playing the subsidy game, and the United States would still have the cost differential on its back.

New High in World Rayon

Continuing its year-to-year record-breaking performance, the world rayon industry in 1938 reached a new high production total (yarn plus staple fiber) of 1,948,045,000 lb., according to the *Textile Organon*, Stanley B. Hunt, editor. This figure compares with 1,818,075,000 lb. produced in 1937, or an increase of 7%.

Although combined output of rayon yarn and staple fiber during 1938 amounted to a new record, the filament yarn branch of the industry experienced its first decline in 24 years. Thus the 1938 production of rayon filament yarn at 990,245,000 lb. was 17% below the all-time record high of 1,198,760,000 lb. established in 1937.

The 1938 record for total rayon production was, of course, made possible by the tremendous growth in staple fiber, of which world production in 1938 amounted to 957,800,000 lb., which compares with 619,315,000 lb. in 1937, or an increase of 55%.

Print Cloth Plan Nears Adoption

It was announced at the annual convention of the South Carolina Cotton Manufacturers Association at High Hampton, N. C., June 3, that less than 2,000 print cloth looms were needed to put over the program that the print cloth committee has been working on. This plan was outlined in last month's issue of TEXTILE WORLD. After the meeting, additional looms were joining, and it appears probable that the plan will have been adopted by the time this issue appears.

Talks on Research

Fuller E. Callaway, Jr.'s proposal for a $25,000,000 annual fund for textile research, contributed by the industry, was referred to in a talk by Dr. E. R. Schwarz, professor of textile technology at M. I. T., during

TEXTILE FOUNDATION'S ROAD COMPANY: The troupe which recently went on tour to interpret to textile manufacturers the Foundation's research programs. Standing, left to right: Warren E. Emley, U. S. Bureau of Standards; Hiram S. Davis, Wharton School. Seated, left to right: Stanley B. Hunt, Textile Economics Bureau; George W. Taylor, Wharton School; Frederick M. Feiker, American Engineering Council; Edward T. Pickard, Bureau of Foreign and Domestic Commerce.

A LENGTH of azure blue wool fabric produced by a Bradford, England, mill, from wools grown in Australia, New Zealand and South Africa, was presented to Mrs. Franklin D. Roosevelt at the Waldorf-Astoria, New York, on May 8. It has been made into the dress which Mrs. Roosevelt wore in Washington on June 8 when she welcomed Queen Elizabeth. From left to right in the above picture are L. R. McGregor, Australian Trade Commissioner, R. M. Firth, New Zealand Trade Commissioner, Emil Horn, Consul for the Union of South Africa, and Mrs. Roosevelt. It will be remembered that a somewhat similar gesture was made on the part of American wool growers in the production of a fabric for Queen Elizabeth made from wools representing all principal American wool districts.

Research Day held by the Associated Industries of Massachusetts, in cooperation with the New England Engineering Societies, in Boston, May 19. Dr. Schwarz also urged increased study and intelligent use of the statistical method of interpreting and handling data.

Speaks in England

Dr. Harold DeWitt Smith, of A. M. Tenney Associates, sailed May 24 for a brief visit in England. He went especially to attend the annual conference of the Textile Institute, the theme of which was "Production, Properties, and Utilization of New Fibers." In conjunction with this meeting, there was an exhibit of new, man-made fibers, both American and European, and of fabrics made from them. Dr. Smith contributed a paper on Teca, the crimped staple fiber made by the Tennessee Eastman Corp., and samples of Teca fiber, yarns, and fabrics were sent for the exhibit.

Institute Honored

The Cotton-Textile Institute received honorable mention in the seventh annual awards of the American Trade Association Executives for special achievement during the year. The Institute's citation was for obtaining a quota on the exports of cotton goods from Japan, and for promotional work to expand markets for cotton.

Gen. Johnson Listed

Gen. Hugh S. Johnson will be the guest speaker at the annual outing and picnic of the Philadelphia Textile Manufacturers Association, at the Manufacturers Country Club, June 28, according to C. Martin Bell, general manager.

Endorse Council

The National Rayon Weavers Association has formally approved participation in the newly planned National Council of the Textile Industries. This action was taken at a recent meeting of the association. It had been expected to perfect the organization of the council last month but the pressure of other meetings prevented. It is hoped that formal organization will be effected shortly.

Rayon Crepe Research

Reports of results of Parts V and VI of the Rayon Crepe Research, conducted jointly by the Throwsters Research Institute and the American Association of Textile Chemists & Colorists, have been issued. These reports cover an investigation of the effects of variations in manufacture of rayon crepe dress fabrics and a study of the variations in normal, first-quality, viscose-type rayon yarn. In presenting these reports, the Research Committee cautioned against drawing conclusions on the basis of individual parts of the research, and announced that the data would be correlated and conclusions published in a final report.

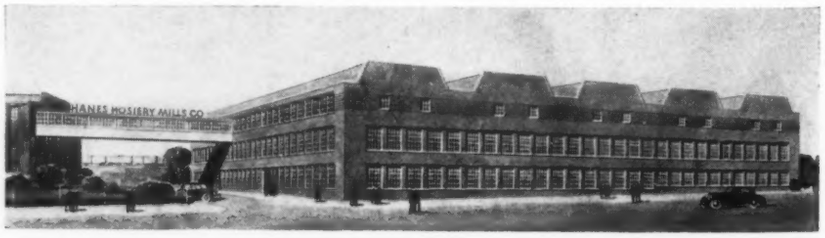
Overseers Meet

Reciprocal trade treaty results featured a meeting of the National Association of Woolen and Worsted Overseers on May 20 at Chopmist Hill Inn, North Scituate, R. I., President Bernard J. O'Reilly being in the chair. James E. Buchanan, Pawtucket, R. I., was the principal speaker. He delivered a powerful indictment of these treaties and declared that the practice of "Buying American" is the immediate answer to the devastating effects of the agreements upon American manufacturing.

Officers were elected as follows: president, Geo. W. Swallow, Utica, N. Y.; first vice-president, Frederick H. Greichen, Plymouth, Mass.; second vice-president, John J. Lyons, Providence, R. I.; secretary, James J. Burns, Holyoke, Mass.; treasurer, Clarence L. Cutler, Methuen, Mass.

Records for Rayon

Both production and consumption of rayon filament yarn established a new high record during the first quarter of 1939, states the *Rayon Organon*. Domestic production of filament yarn for the quarter aggregated 81,200,000 lb., comparing with 57,100,000 lb. in the first quarter of 1938, and 78,900,000 lb. in the first quarter of 1937.



HANES HOSIERY MILLS CO., Winston-Salem, N. C., has let contracts for erection of a three-story addition, about 320x320 ft., to be equipped as a finishing mill. Cost to be about $500,000 with machinery. James Stewart & Co., New York, has the general contract. Albert Kahn, Inc., Detroit, is the architect and engineer.

the latter figure being the previous high record for first quarter production.

Domestic consumption of rayon yarn aggregated 79,200,000 lb. during the first quarter, likewise a new first quarter consumption record. Similar figure for 1938 is 48,800,000 lb., and for 1937 78,800,000 lb. Rayon staple fiber increased from 2,100,000 lb. produced in the first quarter of 1936 to 11,000,000 lb. reported for the first quarter this year.

Synthetic Fiber from Corn Products

Experimental production of a new synthetic fiber derived from corn meal has been announced recently by Corn Products Refining Co., New York. The new fiber is called Mazein. According to U. S. Patent No. 2,156,929 the filaments are produced from zein, a corn-product derivative which can be obtained in fluid form and extruded to form filaments. The yarn is said to have a good appearance, satisfactory elasticity and resilience, and wet strength higher than regenerated-cellulose types of rayon.

Wool-Labeling Bill Status

Schwartz-Martin wool-labeling legislation has been reported favorably by a committee to the Senate, which passed the bill last year. In the House, the committee has had hearings and several executive sessions, but no decision has been reached. It is believed that the opposition is stalling committee action. The outcome is unpredictable. The bill on which the Senate will vote has been changed on several points. Chances for passage seem about 50-50.

Textile Calendar

- *Southern Textile Association, annual meeting, Forest Hotel, Myrtle Beach, S. C., June 16 and 17, 1939.*
- *Piedmont Section A.A.T.C.C., annual outing, Ocean Forest Hotel, Myrtle Beach, S. C., June 23 and 24, 1939.*
- *American Society for Testing Materials, annual meeting, Chalfonte-Haddon Hall, Atlantic City, June 26 to 30, 1939.*
- *National Swim-for-Health Week, June 26 to July 1, 1939.*
- *Southern Conference on Human Relations in Industry, Blue Ridge, N. C., July 13 to 15, 1939.*
- *South Central Section A.A.T.C.C., annual summer outing, Lookout Mountain Hotel, Chattanooga, Tenn., August 4 and 5, 1939.*
- *American Association of Textile Chemists & Colorists, annual meeting, Copley Plaza Hotel, Boston, Sept. 15 and 16, 1939.*
- *National Safety Congress and Exposition, Atlantic City, N. J., Oct. 16 to 20, 1939*
- *17th Exposition of Chemical Industries, Grand Central Palace, New York, Dec. 4 to 9, 1939.*

TEXTILE MILL SIDE-LIGHTS—NO. 6

"—and you Mendolson! Get to work, or you're fired!"

Wool Goods More Complacent

Business in wool goods during the latter part of May was moving steadily in many quarters and sellers were not complaining so much as in April about the slowness of business. There have been price advances of 5 and 10c a yard in some quarters.

The worsted end of the market is the best end, and these mills should be fairly well employed through the summer. Woolen mills have not done quite so well. Overcoating business is moving slowly but steadily and the fall season will be better than that of a year ago.

There is still some interest from buyers for quick deliveries of seasonable goods for the summer trade.

Women's wear fabrics are quiet since they are between seasons. In some quarters increased competition from spun-rayon fabrics both in suitings and coatings is noted.

Cotton Goods Improved

As the month of May progressed, the general cotton goods situation improved. Toward the close of the month there were several active days in gray goods and the situation here was distinctly firmer. Although price advances were scattered, it was notable that bids below the market were failing to uncover goods. Four-yard 80 squares were cleaned up at 5⅝c and considerable quantities had been sold before the end of the month at 5¾c. The 38½-in. 64 x 60s sold at 4¼c.

Sheetings were more active at the close of the month. There was also interest in the finer end of the market and combed yarn goods, although spotty in activity, were steady in price.

Hosiery Prices Up

In a statement at the close of May, Earl Constantine, president of the National Association of Hosiery Manufacturers, concludes that on basis of increased cost of raw materials alone, there should be be an increase of 75c a dozen in the price of hosiery.

Already advances have been made in numerous quarters for the nearer months. For example, Julius Kayser

& Co. advanced its line for June delivery, the lowest number being boosted from $6.00 to $6.35 per dozen.

In early May there was curtailment of about 25% in the full-fashioned hosiery industry, but shut-downs planned during May or June, are probably now further reducing production.

Treaty May Benefit Hosiery

Reciprocal trade agreements are credited by the Department of Commerce for a 17% increase in full-fashioned hosiery exports for the first quarter of 1939 as compared with a similar period in 1938. Shipments to Great Britain alone were reported to be up 68% in comparing the two periods. The National Association of Hosiery Manufacturers points out that the amount is still very small, the increase being only 7,558 doz. pairs, valued at $48,000.

Underwear Quiet

In approaching the fall season the underwear market finds itself facing a gradual development of broader interest. Certain specialties have done fairly well for summer distribution but the regular bread-and-butter lines are awaiting developments. The trade expects that there will be further development toward somewhat heavier shirts and renewed interest in longer drawers for cold weather wear.

Fine Rayon Rises

About the middle of May several producers advanced the finer deniers by 9 to 12c per pound. On May 17 the Acetate Division of E. I. du Pont de Nemours & Co. advanced 45-denier Acele weaving yarn on cones and spools from 93c to $1.05. A few days before, North American Rayon Corp. advanced its 50-denier from 83c to 92c.

In the rayon fabric field, sheers are in demand with resulting selling of 75-denier viscose yarn. There is interest in the market as to whether the rising price trend will affect 75 and higher deniers. Heavy orders for staple fiber for fall fabrics are reported.

And Silk Still Rises

The net result of the month of May on the raw silk market was a small gain. Crack XX, which touched $2.80, closed the month at about $2.65. The price of grade D in the outside market at Yokohama touched 1,300 yen per bale.

Reports from Japan indicate expectation of a market control plan to go into effect some time in June, and it is said that the Government is planning to stabilize the price of silk at around 1,200 yen per bale.

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Wool Tops Slow

Following a decided upturn early in May the wool top market moved into a quieter period. At the end of April spot tops were quoted at 84½c. On May 5 the price had advanced to 85½c, and on May 12 to 86½c, which receded ½c at the end of the month.

This and That

► At a meeting of the Textile Square Club held May 24, in New York, Dr. Donald H. Powers of Rohm & Haas Co., Philadelphia, discussed latest developments in textile finishing, with particular reference to the use of resins.

► The National Association of Finishers of Textile Fabrics is completing plans for the observance of its 25th anniversary. The meeting will be held June 17 and 18, at the Sea View Golf Club, Absecon, New Jersey.

► Drapery fabrics woven from glass yarns have recently been introduced by J. H. Thorp & Co., Inc., New York. The fabrics range in weight from nets to upholstery weights and in price from $2.25 to $10.50 per yard retail. All of the fabrics are 50 in. wide.

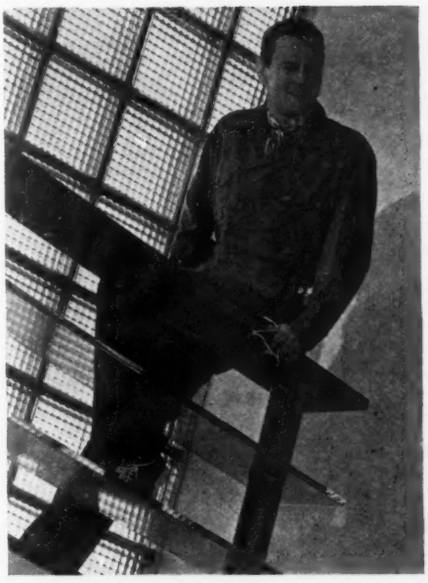
► Announcement was made last month that Celanese Corp. of America has become owner of the two U. S. patents of Trubonizing Process Corp., covering manufacture of fused collars. This ends a long litigation over the fused-collar patents which culminated in the decision of the U. S. Circuit Court of Appeals affirming the validity of the patent granted to Dr. Camille Dreyfus, president of Celanese Corp.

► Wickliffe Rose, of American Viscose Co., was the speaker before the American Association of Textile Technologists, in New York, June 7. His topic was "Yarn and Fabric Trends in Europe and America."

Textile Novelties and News Shots

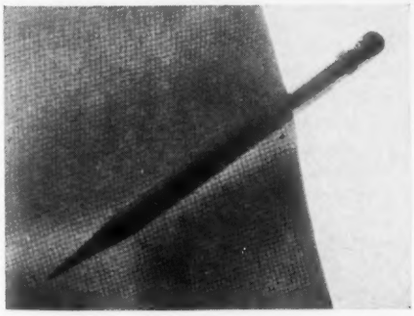
Here are the King and Queen of the Memphis Cotton Carnival. The big show opened in Memphis May 10. When the picture was taken their majesties had just arrived on their barge and were being welcomed by Vice-Mayor, Clifford Davis (left). (Wide World Photo).

Spun rayon and cotton are the constituents of a fabric which is being successfully used for summer - weight dinner coats. This particular fabric is Crown - tested Kenya cloth, woven by Wamsutta Mills (right).



(At left) Silk shantung slacks and shirts are offered for beach and country, and for lounging at home in or out of town. The combination pictured above wholesales at $7.50 per suit. Picture was taken at the Glass Center, New York World's Fair.

(At right) Play clothes for "Teen Age" are being made of Sanforized, woven-fleck denim. The garment manufacturer in this case is the Touraine Co. The line includes the shortall and shirt shown above, and also slacks, coats and other garments. The bright new colors are referred to as "Grand Canyon" colors.



This is not an X-ray photograph of a pencil but rather a view of a pencil seen through a sample of one of the United States Rubber Products, Inc.'s new materials known as "Multipore." This is a soft rubber sheet made in accordance with a special process and carrying 6,400 small holes per square inch of material. The hole diameter is .004 in. The material is used for filtration or for bathing suits. A similar rubber sheet with knitted fabric cemented thereto, is being used for reducing garments. The numerous minute holes give ventilation.

A cotton ball was given recently in Auburn, Ala., by the Phi Psi Textile Fraternity. These students are pickin' in high cotton. On the bale are Miss Mary Louise Shirley of Birmingham, Ala. and Miss Louise Thornton of Montgomery, Ala., while Virgil Rice of Birmingham and David Carroll of Pensacola, Fla., are pickin' them for partners. All costumes and decorations for the ball were made of cotton. (Photo by Lewis Arnold).

Wage-Hour Pot Starts to Boil

Reports of majority and minority now in, and hearings scheduled—Wool men protest

By BLAINE STUBBLEFIELD
Washington Office, TEXTILE WORLD

SUPPORTING argument for the Textile Committee's previously announced recommendation of a 32½-c basic wage for the industry, went in a formal report to Wage-Hour Administrator Andrews on May 22. Also to Mr. Andrews went a 34-page minority report signed by six members of the committee, and a protest by E. L. Foshee of Texas, asking that the administrator refer the question back to the committee or to a new committee. Back of these objections still hovers the threat of a court challenge by southern cotton manufacturers in case the administrator sustains the wage recommendation after hearings.

The second main problem before the Wage-Hour Division is the wool manufacturers' vigorous objection to Mr. Andrews' redefinition of the cotton-silk-rayon industry to include goods containing up to 25% wool and yarn containing up to 45% wool. It is reported here that the wool men, like the cotton men of the South, are also threatening to sue the division and its executives.

This may appear to the man in the field like a lot of antagonism to the law. But considering that most industrial reforms get a barrage of vegetables when the curtain first goes up, observers here think that the Wage-Hour Division is getting off fairly easy. The division itself, though deeply concerned about the dissent of the textile groups, is said to feel pretty well pleased with its reception by the country in general, and for that reason can go the limit, within the law, toward satisfying all concerned without losing face.

GIST OF THE COMMITTEE RECOMMENDATIONS

Textile Majority—The 32½-c. rate recommended is the highest rate that would not curtail employment, and cost increase will be slight.

The minimum will not disturb the regional distribution of the industry. It will markedly affect low-wage mills on the fringe of the industry and will protect the great bulk of mills, North and South, against competitive wage-cutting.

Due to competitive inter-relationship of products made from cotton, silk, rayon, flax, jute and mixtures of the same, the committee concluded that products classifications would be impracticable.

Evidence before the committee did not warrant regional classification.

Textile Minority—The recommendations of the majority were not made in accordance with law. The administrator did not give due regard to geographic considerations in appointing the committee. Administrative order No. 1 provided no sufficient guidance for the committee. The majority failed adequately to consider various factors required by the Act to be taken into account.

Recommendations of the committee were not supported by the evidence adduced. On the contrary, the evidence strongly indicates that the 32½-c. minimum would produce substantial unemployment.

Congress intended a more gradual approach toward the 40-c minimum, and such approach would be more in keeping with sound administrative and public policy.

Before the full effect of the 25-c. minimum can be fully appraised, the increase to 30c. must be made in any event.

A more gradual approach to the maximum in the textile industry would allow time to fix minima in other low-wage industries, thereby increasing purchasing power of a maximum number of low-wage workers.

Hosiery—In seamless hosiery, the committee finds that the minimum wage rate of 32½c. can be borne by the industry with no substantial curtailment of employment. The increase would add only 2.5% to average production costs and 3% in the South. The effect on retail prices will be too small to curtail consumption.

In full-fashioned hosiery, the committee finds that a minimum wage of 40c. will neither substantially curtail employment nor unduly affect economic and competitive conditions. This increase would add less than one per cent to average production costs, and not more than 1.7% in the South.

Now that formal recommendations, except on wool, are in the administrator's hands, hearings on textiles are scheduled to begin June 19 in Washington and June 26 in Atlanta. Hearings on hosiery will start in Washington on June 12. This will shift previous forecasts as to the probable date of final orders back to July. The Textile Committee majority asked that it be July 1. Best information obtainable is that the administrator has shown no sign of acceding to requests that he postpone his 32½-c wage order to Oct. 24, when the wage becomes 30c, regardless of committee or administrative action. Mr. Andrews says that the law does not authorize any unnecessary delay.

Washington textile dopesters have predicted for months that manufacturers would start building invoices against any known day when costs would advance due to wage increases. The talk now is that less maladjustment would result if the new rates were made effective at the earliest possible date, so as to forestall any great volume of speculative production. Regardless of what Mr. Andrews may think about manufacturers rushing goods under a low-cost wire, his expressed attitude on the law would indicate that he will not stall any time away.

It would be useless to try to draft the outlook on the South's controversy with the Wage-Hour Division over the minimum textile rate recommended. The situation changes almost from day to day. The American Cotton Manufacturers Association, Washington hears, is still hopeful that "a more gradual approach" will be made by the division toward increased wages. The administrator himself probably could not make any predictions as to what his attitude will be. He told TEXTILE WORLD as this was written that he is determined to keep an open mind, regardless of curbstone talk, until the hearing record is complete and he has studied it thoroughly. Opinion persists here that the administrator may be persuaded to hand the recommendations back to Donald Nelson's committee and appoint a new group. The new committee would

be expected to compromise by setting up classifications, some of which would be paid the statutory 25-c minimum—probably 30c by the time action could be taken.

Most of the new developments are in the wool overlap situation. It will be recalled that Mr. Andrews, though the law does not require it, invited the committee to recommend to him the original cotton-rayon-silk definition of the industry, which it did and which he promulgated in his order of Jan. 7. Certain knit goods and hosiery were not admitted. Wool chose to remain outside the "textile" tepee to have a committee of its own, which soon thereafter was set up as I-A. It was understood at that time that a line of demarcation would have to be drawn, dividing wool from "textiles," because they were to operate at different wage levels.

Both the committees and the division's committee service section agreed that "trial balance" wage rates would have to be set for textiles and wool as compass legs for inscribing the line of demarcation. Accordingly those rates were set, apparently on a tentative basis, since they were not formally entered until May 22. Then again, allegedly to give the two industries a fair chance to define themselves, and probably also to avoid putting himself in a spot, Mr. Andrews asked the committees to recommend the wool-mix percentages that would mark their adjoining property lines, as it were.

". . . I regret to report," wrote Chairman Donald Nelson to Mr. Andrews, "that it has not been possible to get the Committee No. I and I-A to agree on any recommendation. . . . The Woolen Committee unanimously recommends that any fabric or yarn containing any wool be governed by the wage set for Committee No. I-A. The Cotton Committee by a vote of 9 to 7 recommends the following: . . ." What the cotton group recommended was the old NRA definition. Mr. Andrews that same day ordered the same, with the statement that he believed it would avoid conferring advantage upon either wool or textiles, and that "it will eliminate insofar as possible the imposition of two different minimum wage scales in the same mill." He said it is identical with that which prevailed under NRA, and that it had worked satisfactorily during that time.

Official protest was made to Mr. Andrews by the National Association of Wool Manufacturers, in a letter signed by Arthur Besse, president. The main objections advanced by the association were that: (1) The line of demarcation is manifestly unfair; (2) The line as drawn very definitely confers "a competitive advantage" to a group within the textile industry in controvention of section 8 (c) of the act; (3) The definitions are completely at variance with the recommendations of a joint sub-committee representing the cotton and the wool groups. In connection with the latter objection, Mr. Besse's letter goes on to state that "the line of demarcation which is contained in the Administrator's orders #24 and #25 corresponds exactly with that proposed by the single dissenter rather than that recommended by the other four members of the joint committee." The letter requested the Administrator to urge a review and revision of those two orders.

What the wool men may be able to do about their case is a matter of much speculation in Washington. The wool committee is not up for hearings with the textile group. The wool group's formal recommendation is not in, and is not expected to be submitted until after the hosiery and textile hearings. But because the textile industry *naturally* overlaps wool (*officially* by virtue of the Administrator's definition order) and because the wool men are therefore interested parties, it is assumed that their brief and their testimony will be considered at the textile hearings.

As already indicated, the wool manufacturers probably would claim, if they should eventually resort to legal action, that the Administrator's definition placed them at a competitive disadvantage. The law says more than once that industry committees must consider competitive conditions in making their recommendations, and it says that the administrator must consider the same conditions in issuing wage orders based on their recommendations. But it does not say specifically that the Administrator in defining an industry must consider competition. Nevertheless a common sense of justice indicates, the lawyers say, that Congress did not intend that any industry definition should compromise the interests of another. Be it said that no one accuses Mr. Andrews himself of wanting to give anybody an advantage.

The New Line-Up: UTW and TWU

Both AFL and CIO unions claim victory in recent skirmish

WASHINGTON, D. C.

ACCORDING to their own stories, the Congress of Industrial Organizations and the American Federation of Labor are both winners in the battle for control of organized textile labor.

CIO, with its merger of the Textile Workers Organizing Committee and United Textile Workers into the new Textile Workers Union of America, seems to have by far the superior force of numbers. Impartial observers, if such there be, think the Lewis faction also has the advantage of greater skill in leadership. Best guess is that Lewis will give TWU the additional advantage of adequate financing, which after all, is the steam that makes unionization go.

AFL has the advantage of doing business in the name of an old established firm, for United Textile Workers goes back under the parent wing with legal right to its name, and its funds if any, cleared by the Rhode Island court. Opinion here is that TWOC's membership, and now that of TWU, is greatly overrated, but also that UTW's strength in numbers at this time is only a fraction of that of its opponent.

Francis Gorman, who is still very much in his organization as chairman of the executive committee, believes that TWOC failed to organize the industry, particularly the South, because of "undemocratic" methods. He says he does not believe that the Lewis group will succeed in its new drive, for the same reasons, even though it pours a great deal more money into the project. There is no evidence as yet that AFL is going to dish up any considerable amount of promotion money for UTW. The Green forces appear to be resting on their conviction that CIO is persona non grata in the South, and that when the South is organized, AFL will organize it.

Mr. Hillman's strategy apparently is going to be the same as it has been in the past: use the power of unity on an industrial basis and sell the workers on results. He is evidently not at all afraid of the unwelcome door-mat in the South, although he is offering some degree of the Green brand of democracy there.

Both of the big labor camps know well that textile workers are mighty raw recruits who respond poorly to the "fall in" call. It is just possible that both of them will take it easy for a while, anticipating the time when "we can all be together again," as one of them wistfully put it.

Georgia Manufacturers Meet

R. O. Arnold elected president—

Association opposes export subsidy

MORE THAN 200 Georgia textile executives and guests, many with their wives, traveled through pine forests and along avenues of moss-draped oaks to attend the 39th annual meeting of the Cotton Manufacturers Association of Georgia at Sea Island, Ga., May 25 and 26.

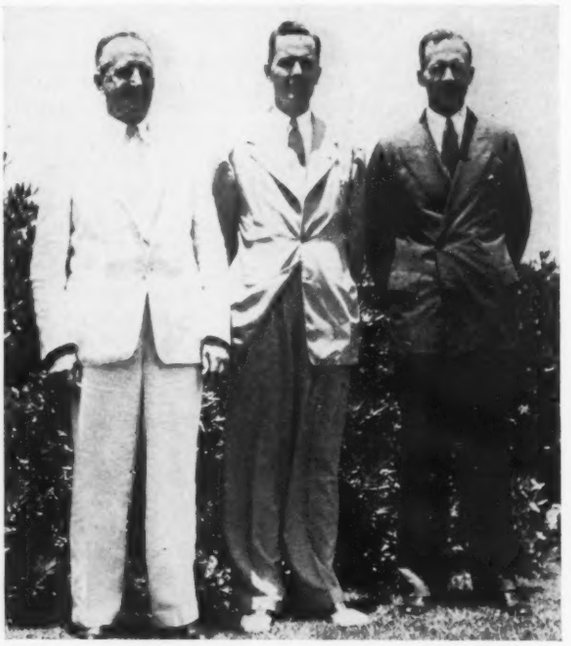
At the general business session, Fuller E. Callaway, Jr., president of the association, paid tribute to the accomplishments of the individual members and mentioned that during the last year they had "paid to the cotton farmers something like $45,000,000 for approximately 1,000,000 bales of cotton . . . spun into yarn and woven into fabric. We have paid to our 85,000 employees approximately $65,000,000 in wages . . . have supplied the public with over a billion yards of cloth." But another item on the inventory did not look so good, he continued. "For our stockholders whose money we have used to accomplish these results, we have lost approximately five million dollars," he said. "Our stockholders who have something over $200,000,000 invested in our industry have been repaid for their confidence by a slap in the face."

Mr. Callaway referred to his recent talk before the American Cotton Manufacturers Association in New Orleans and reiterated the need of merchandising research. "The textile industry," he said, "is the only industry of large proportions which depends for the distribution of its manufactured product upon agencies which have practically no financial interest in the price at which the goods are sold." He suggested a new contract arrangement based on the sliding scale principle, and said in his opinion the selling agent as well as the mill would profit thereby.

William Conover, assistant director of industrial research, United States Steel Corp., Pittsburgh, Pa., was presented by Mr. Callaway and very ably discussed "Industrial Relations—the Reflection of Management Attitudes."

View of Cloister Hotel from the air, headquarters of the convention.

George O. Jones of Callaway Mills, spoke briefly on the Federal Wage and Hour Act. His references to the difficulties encountered in correcting the calendar struck a resounding chord of approval. This delightful and unexpected touch of humor in an otherwise serious group of discussions was thoroughly enjoyed.



Officers of Cotton Manufacturers Association of Georgia at Sea Island (left to right), R. O. Arnold, Covington, new president; Fuller E. Callaway, LaGrange, retiring president; and T. M. Forbes, Atlanta, secretary. Mr. Arnold is treasurer and manager of the Covington Mills, Covington; and Mr. Callaway is president of the Callaway Mills, LaGrange.

At the business session held next day routine reports were presented by T. M. Forbes, secretary; C. T. Kilgore, C. M. Spinning, T. J. Lewis, Norman Elsas, H. Gordon Smith, and R. O. Arnold. Resolutions were adopted asking that (1) no further increase in wage scale be imposed on the industry at present time; (2) present proposed changes to cotton futures contract be not enacted but other changes protecting the buyers' interests be made; (3) Senators and Representatives be urged to amend NLRA to give much needed relief to employers, (4) no export subsidy on cotton be instituted as proposed by amendment suggested to Agricultural Adjustment Act.

Allen Jones, superintendent of Muscogee Mfg. Co., Columbus, was introduced and spoke briefly but effectively in behalf of the Textile Operating Executives of Georgia. "Your junior organization," he said, "needs and deserves your whole-hearted support and cooperation."

The following new officers and directors were elected: R. O. Arnold, treasurer and manager Covington (Ga.) Mills, president; J. A. Miller, president Exposition Cotton Mills, Atlanta, vice-president; George P. Swift, vice - president Muscogee Mfg. Co., Columbus, treasurer. T. M. Forbes and C. T. Kilgore of Atlanta, were re-elected secretary and traffic manager, respectively. Directors elected to serve for four years were D. A. Turner, Don Harvey, Julian Hightower, T. M. Arnall. To succeed D. W. Anderson and Lanier Branson, resigned, terms to expire in 1940, the association elected Scott Russell and S. H. Swint.

The annual banquet in the main dining room Thursday evening was presided over by Mr. Callaway as toastmaster. Harry Foster Welch

provided adequate and unusual entertainment.

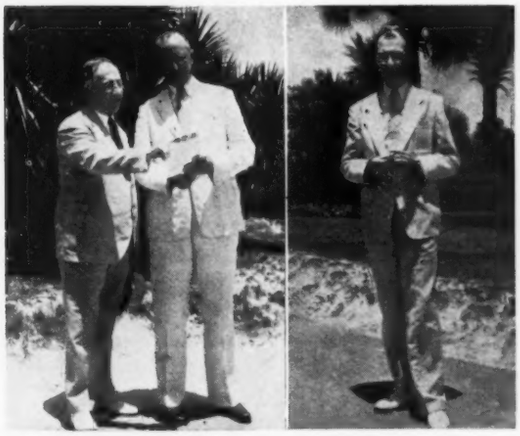
At this evening session golf prizes were presented. Low gross prize was won by Tom Mott, Greenville, S. C.; low net, for members by Frank Williams.

Other golf winners were Ira McDaniel, George Hightower, Ted Lewis, Chas. Thompson, L. Lanier, Webb Durham, Clyde Williams, J. R. Harris and Geo. O. Jones.

At the closing session, Harrison Hightower in a very happy strain presented the retiring president, Mr. Callaway, with an appropriate token of respect and esteem.

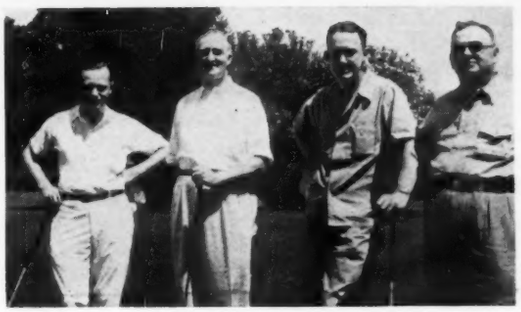
Members of the Board of Directors of Cotton Manufacturers Association of Georgia (left to right), first row, Albert T. Matthews, Thomaston; Frank B. Williams, West Point; G. K. Parmenter, Atco; H. Gordon Smith, Hogansville; second row: S. W. Thornton, Hartwell; J. T. Hightower, Thomaston; I. C. Milner, Thomaston; and J. A. Miller, Atlanta.

Past presidents of Cotton Manufacturers Association of Georgia (left to right), front row: P. E. Glenn, Atlanta; W. H. Hightower, Thomaston; and W. N. Banks, Grantville; second row, Cason J. Callaway, LaGrange; Paul K. McKenny, Columbus; Norman E. Elsas, Atlanta; and D. A. Jewell, Jr., Chickamauga. Sea Island Photo



(Left) J. A. Miller, newly-elected vice-president, and R. O. Arnold, new president. (Right) Geo. O. Jones, Callaway Mills, LaGrange, Ga., who spoke.

Henry M. Tichenor, president, Walton Cotton Mill Co., Monroe, Ga., takes on a large order playing with Chas. Stover, Tom Mott and A. A. Harden of Corn Products Co., New York. (At right), Yates Smith, treasurer, Gainesville (Ga.) Cotton Mills; Walter M. Wellman, president, Textile Co., Whitehall, Ga.; Ralph Harris, Goodbody & Co., New York; Harry Wilmerding, Corn Products Co., N. Y.



(Above) G. I. Parmenter, Goodyear Clearwater Mills, Cartersville, H. D. Mercer, Jas. Talcott, Inc., New York; Robt. Edmond, Georgia Power Co., Atlanta, I. A. McDaniel, Goodyear Clearwater Mills, Cartersville. (Left) Gus Staley, President, A. E. Staley Mfg. Co., Decatur, Ill.; Harry Coley, Howard Bros. Mfg. Co., Worcester, Mass.; Robt. Phillip, Editor Cotton, Atlanta; Albert Lehman, Jr., Dixie Cotton Mills, LaGrange.

Passaic Herald News Photo

HAPPY BIRTHDAY TO BOTANY—Officers of the company and speakers at the Anniversary Dinner in New York. Standing, left to right: Max. A. Stoehr, chairman of the board; Chas. F. H. Johnson, Jr., vice-president; Otto E. Kuhn, treasurer; Raymond S. Bartlett, vice-president; Col. Chas. F. H. Johnson, president; F. A. Burghardt, vice-president; and Congressman George N. Seger. Seated, left to right: Donald Richberg, former head of NRA; and Gov. A. Harry Moore of New Jersey.

Botany Celebrates

Fiftieth anniversary marked by series of events

BOTANY WORSTED MILLS, of Passaic, N. J., reached the age of 50 last month and had a birthday party, in fact a series of birthday parties.

The celebration started with a dinner tendered to Botany on May 4 by the combined civic and business organizations of Passaic. During the week of May 8, there were several family events, including the dinner given by the management in the mill cafeteria to the men and women of long service; the grand jubilee dance for all employees in the recreation room at the plant; and the presentation, by the employees, of a bronze plaque commemorating the anniversary.

The climax of the celebration was a brilliant dinner at the Hotel Biltmore, New York, on May 11, the actual birthday, attended by more than 1,000 members of the trade and other friends.

With Col. Charles F. H. Johnson, president of Botany, acting as toastmaster, the speakers included Gov. A. Harry Moore of New Jersey; Charles B. Henderson, director of the Reconstruction Finance Corp., who substituted for Jesse Jones, chairman; Congressman George N. Seger of Passaic; and Donald Richberg, former head of the NRA.

The dinner was a personal triumph for Col. Johnson, as all the speakers paid glowing tributes to him for his courageous and buoyant leadership during the difficult years of his presidency. Governor Moore expressed particularly high praise, and stated that an organization such as Botany was a credit not only to the community where it is located but to the entire State as well.

Speaking for the RFC, Mr. Henderson stated that, because of aid from that organization, Botany Worsted Mills had been able, during the period from 1934 to 1938, to give the community around Passaic 33,718,000 man-hours of work, involving $21,874,000 in wages to some 5,000 workers and their more than 20,000 dependents. He contrasted the present condition of Botany with its state in 1934 when it got its first RFC loan, at a time when the plant was threatened with closing because of financial difficulties, and when many of the other industries in Passaic were closed or had gone out of business.

Col. Johnson, in his introductory remarks as toastmaster, emphasized the need of the "Buy American!" movement, pointing out that one of the methods of reviving American industry and giving employment to the people of the country would be through stressing American labor, American products, and everything made in America.

During the reception which preceded the dinner, guests had an opportunity to see the tableau of mannequins which depicted a half-century of Botany fabrics as worn in the various style periods of the last 50 years. Credit for this highly interesting display goes to Mrs. Gertrude M. Hogan, of Botany's New York sales and promotion office. It was the result of four months' research on the part of Mrs. Hogan, aided by the Traphagen School of Fashion.

At the "Botany Old Timers' Dinner" in Passaic May 8, in honor of over 300 employees with service records of 25 years or more, gold and diamond medals were presented to 14 having 45-year records, or better, and gold and ruby medals to 10 others having 40 years service, or more. The oldest in point of service is Dan Meredith with a record of 49 years, six months. He began work at 11, following the accidental death of his father killed in the construction of the first plant, and was then told he would have a job for life.

From all reports, Botany's management, employees and friends had a marvelous time during the week of birthday parties.

Nylon's Properties

Physical, chemical, and dyeing characteristics of new synthetic fiber

INTEREST among textile men in Nylon was intensified with the announcement reported in our May issue that E. I. du Pont de Nemours & Co., Inc., has been granted four patents covering the use of polyamide yarn for stockings; pre-boarding of stockings; and setting yarns and fabrics to enhance elastic recovery, crimp, and crease retention. An $8,500,000 Nylon plant at Seaford, Del., is scheduled for completion early in 1940. At present the yarn is being produced in a limited quantity by a pilot plant located at the company's experimental station, near Wilmington, Del.

For several months Nylon sewing thread has been marketed commercially. In addition, hosiery, knitted underwear, and woven fabrics have been produced experimentally. Intrigued by the great strength, elasticity, and wearing qualities claimed for Nylon, textile men in all branches of the industry are eager for further information regarding the physical, chemical, and dyeing properties of the new fiber. The following data on Nylon's characteristics have been supplied by the Du Pont company and by various textile men who have experimented with the yarn.

This is a Nylon stocking caught by our staff photographer in the Du Pont exhibit at New York World's Fair

One of the important characteristics of Nylon is the fact it can be produced in filaments of exceedingly fine size (0.2 denier, or less).

Another of the outstanding physical properties of Nylon is its high tensile strength, especially when wet. According to the manufacturer, the dry tensile strength is approximately 5 grams per denier; the wet strength, approximately 4.4 grams per denier. This corresponds to a dry strength of about 2 grams per denier for viscose type rayon. The tensile strength is not affected by ironing or drying up to temperatures of 400°F. At temperatures of about 470°F. the fibers melt.

Elongation can be varied widely by modifying the manufacturing process. A typical yarn has a dry elongation of about 20%, and a wet elongation of about 30%.

Up to 8% stretch Nylon has an elastic recovery of 100%; with 16% stretch, elastic recovery is 91%; with 25% stretch at 85% relative humidity elastic recovery of polyamide yarn is 77%, as compared with 65% for silk yarn.

Nylon is less hygroscopic than most natural or synthetic fibers. Thus, at 60% r.h. it absorbs only 3.7% moisture; at 70% r.h., 4.55% moisture; at 80% r.h., 5.55% moisture, and at 90% r.h., 6.7% moisture.

Moistening of Nylon yarns or fabrics with a solution of sodium sulphite followed by a short steaming enhances the elastic recovery, crimp, and crease retention.

Chemical Properties

Nylon is described chemically as a polyamide produced by the reaction between a primary or a secondary diamine and either a dicarboxylic acid or an amide-forming derivative of a dibasic carbolic acid. Pentamethylenediamine is typical of the former type of chemical, and sebacic acid is typical of the latter type. In its chemical composition, Nylon resembles silk more closely than it does any of the other natural fibers. Fibers, yarns, and fabrics made from these polyamides show a high resistance to many chemicals. For example, at a temperature of 75°F. Nylon is not affected by 20% acetic acid or 37% formaldehyde. Likewise, treatment for 2 hr. at room temperature with 3% hydrogen peroxide or sodium hypochlorite does not lower the tensile strength. On the other hand, boiling in 5% hydrochloric acid makes the fibers brittle and finally destroys them. Exposure to steam at 390°F. for 3 hr. has no effect on the tensile strength. However, at 435°F. there is some loss in tensile strength; and at 465°F. there is a large loss in tensile strength.

At room temperatures most solvents have little or no effect on polyamide fibers. The fibers can be dissolved, however, in phenol, m-cresol, xylenol, and formic acid. At high temperatures a few other chemicals act as solvents.

Dyeing Properties

Nylon can be dyed with many of the dyes ordinarily used for silk and wool, and particularly good results have been obtained with dyes employed for acetate rayon. Experiments to date indicate that a selected range of neutral-dyeing acid colors are the most satisfactory from the viewpoint of general fastness and ease of application.

Typical of the acid dyes which have proved particularly satisfactory are: Milling Yellow 5G (C. I. 642); Milling Yellow R (Pr. 151); Milling Orange R (Pr. 125); Milling Red SWG (C. I. 430); Anthraquinone Rubine R (C. I. 1091); Anthraquinone Violet 3R (C. I. 1080); Anthraquinone Iris R (C. I. 1073); Anthraquinone Blue SWF (Pr. 10); Anthraquinone Blue AB (C. I. 1075); Anthraquinone Green GN; and Pontacyl Fast Blue 5R (C. I. 589).

Light shades are produced by applying these acid dyes in a neutral bath containing 10% of glauber salt; medium shades are dyed in a bath containing 5% of ammonium acetate and 10 to 20% of glauber salt; dark

shades are dyed with the addition of 5 to 10% of ammonium acetate and 20% of glauber salt. Dyeings are cleared in a bath containing 1 to 2% of formic or sulphuric acid. The various dyes mentioned can be mixed to produce combination shades.

For blacks, mordant acid colors, such as Pontochrome Black TA (C. I. 203), can be applied in a bath containing 10% of glauber salt and 5% of acetic acid. The yarn is dyed for 20 min., 2% of sulphuric acid is added to the bath, dyeing continued for 20 min., another 2% of sulphuric acid added, dyeing continued for 20 min., 4% of sodium bichromate added, dyeing continued for 45 min.

Black shades can also be produced with developed dyes for acetate rayon, such as Acetamine Diazo Black 3B. The dye is applied in a bath containing 2% of soap. Dyeing is started in a lukewarm bath, the temperature is raised gradually to 180 to 200°F., and dyeing continued at that temperature for 1 hr. Addition of 4 to 8 oz. of a wetting agent of the fatty alcohol sulphate type promotes penetration and level dyeing. Dyeings are diazotized for 1 hr. in a cold solution containing 7% of sodium nitrite and 14% hydrochloric acid. The yarn is then rinsed and treated in a 4% bath of beta-hydroxynaphthoic acid.

In some instances, the fastness of dyeings on Nylon differs from that of dyeings made with the same dyes on other fibers. In general, however, shades obtained with the products mentioned above possess good general fastness to light, washing, dry-cleaning, and perspiration. Textile men who have experimented with Nylon state that it is more difficult to obtain complete exhaustion of the bath than is the case with silk.

Considering the short time that Nylon has been available, even for experimental purposes, comparatively little trouble has been encountered in handling it on textile machinery. Several people who have conducted actual wear tests of hosiery made from Nylon, have noted that while the stockings have proved to be remarkably resistant to wear, they have a somewhat clammy feel. Some difficulties have also been experienced in winding, warping, and sizing Nylon yarns. However, as textile men become more familiar with the properties of this new fiber, and as special sizing and finishing compounds and methods are developed, these drawbacks undoubtedly will be overcome.

Social-Security Records

How a small company can keep them straight

By SYBIL BRYANT
Wrenn Hosiery Co.

THE METHODS for keeping Social Security Records for employees are just now beginning to get ironed out. At first there was a great dal of confusion as to the length of the terms for these reports. There was also the question as to just when these reports were due. Now, however, things are in better shape. We know that these reports are due every three months for sure.

Since we do not have a bookkeeping machine, and do all of our work by hand, it was rather difficult for us to plan a system of keeping these records straight. After a great deal of experiment, we finally decided on the following simple method.

The time for each worker is recorded daily in a Time Book. At the end of the pay period, the total wages earned are added and the total amount for that particular pay period is recorded at the end of the wage column. We use a separate book for the Social Security Records. This book is one with ruled columns about 1 in. wide. There are thirteen of these columns. On the left-hand side are two spaces, each of which is about 3 in. in width. The pages of the book are somewhat similar to the accompanying illustration.

In the first column the name of the employee is entered. In the second column the Social Security Number of the employee is written. In the next columns (the smaller ones, about 1 in. wide) the amount of the wages for the different day periods are entered. The date of the pay period is placed at the top of each of these columns. At the end of the pay period, and after the wages have been recorded in the Social Security Book, the total amount as posted in the Social Security Book is checked against the total amount shown by the Time Book. This assures that the total is correct.

At the end of the three months the total for each employee is added, and the grand total is placed in the last column on the page. The grand totals for each different employee are then added, and the total amount of these is placed at the end of the list of wages earned for the quarter. Of course, we then add the totals for each pay period, and check this total against the total for the quarter.

This has proved to be a simple, yet sure method for keeping the Social Security Records straight.

SOCIAL SECURITY RECORD

NAME	SOCIAL SECURITY NO.	JAN. 7	JAN. 14	JAN. 21	JAN. 28	FEB. 4	FEB. 11	FEB. 18	FEB. 25	MAR. 4	MAR. 11	MAR. 18	MAR. 25	APR. 1	TOTAL FOR QUARTER

Hands Across the Sea

British delegates captivate domestic textile men by their frankness and knowledge

THEY CAME, they saw, they conquered. Two delegates of the Manchester, England, Chamber of Commerce met with groups of textile men in this country last month; discussed controversial subjects—even the reciprocal trade agreement between the United Kingdom and the United States—bravely and frankly, and were in turn awarded complete frankness by domestic manufacturers and selling-agents. Probably firm convictions on either side were not altered, but a mutual understanding and respect was engendered which promises much for future Anglo-American relations, at least in this industry. And since that was the primary purpose of the mission, its members may count their trip an unqualified success.

The head of the mission was Col. W. A. Grierson, D. S. O., D. L., a cotton spinner and rayon manufacturer. He was trained by his father in a well-known firm of Lancashire cotton spinners, of which he is now a director. Some years ago he also turned his attention to the rayon industry and is managing director of a yarn producing company in that field. The other member was E. Raymond Streat, C. B. E., director and secretary of the Manchester Chamber of Commerce, and identified with that organization for 20 years. Miss A. C. Dodd, secretary to the mission, accompanied the delegates.

The two visitors were guests of a group of textile associations at a dinner at the Union League Club, New York, May 23. The participating organizations were the Cotton-Textile Institute, the Association of Cotton Textile Merchants of New York, the Textile Export Association, and the National Rayon Weavers Association. Dr. Claudius T. Murchison, president of the Cotton-Textile Institute, presided. The delegates were accompanied by Sir Owen Chalkley, Commercial Counsellor at the British Embassy in Washington.

In addition to the three guests, those present included: Goldthwaite H. Dorr, chairman of the board, Dr. C. T. Murchison, president, Paul B. Halstead, secretary, and H. E. Michl, all of the Cotton-Textile Institute; W. Ray Bell, president of the Association of Cotton Textile Merchants of New York; Frank Hillery, president of the Textile Export Association; Chas. Whitney Dall, president of the National Rayon Weavers Association; Lindsay Crawford, secretary of the National Foreign Trade Council; Elroy Curtis, Southeastern Cottons; Saul Dribben, Cone Export & Commission Co.; S. H. Johnson, West Boylston Mfg. Co.; Fessenden S. Blanchard, W. O. Jelleme and S. J. Kennedy, all of Pacific Mills; F. S. Bruyn, Turner Halsey Export Co.; John Whitaker, Hesslein & Co.; W. C. Planz, Neuss-Hesslein & Co.; W. F. Adam, Federated Textiles, Inc.; and Douglas G. Woolf, editor of TEXTILE WORLD.

COMBED YARN SPINNERS GREET BRITISH VISITOR: (left to right) J. H. Lineberger, vice-president, Southern Combed Yarn Spinners Association; Col. W. A. Grierson, head of the Manchester Mission; Mildred G. Barnwell, executive secretary of the Association; Douglas G. Woolf, editor of TEXTILE WORLD, *who accompanied Col. Grierson on his southern trip; and R. D. Hall, chairman of the association's executive committee. The president of the Association, J. C. Roberts, joined the party later.*

E. Raymond Streat, who, with Col. Grierson (shown in group picture above) constituted the Manchester Mission.

Col. Grierson, head of the mission, had an opportunity to get first-hand knowledge of conditions in the southern textile industry, when he was guest of the Southern Combed Yarn Spinners Association. Accompanied on the trip South by Douglas G. Woolf, the visitor was shown through mills and mill villages at Belmont and Cramerton, N. C., was honor guest at a luncheon given by the board of governors of the association at the Gaston Country Club, Gastonia, N. C.; was entertained at tea by Carl Rudisill, president of the Carlton Yarn Mill, Cherryville, N. C., in the model community house of that mill; and was entertained at a mint-julep party at the home of Mrs. Mildred G. Barnwell, executive secretary of the association. The officers of the association who escorted Col. Grierson and Mr. Woolf on the mill tour included J. C. Roberts, president; R. D. Hall, chairman of the executive committee; J. H. Lineberger, vice-president; and Mrs. Barnwell.

The British visitor expressed great surprise at the utter candor with which the spinners answered all questions concerning their methods and their costs. The domestic manufacturers, in turn, were amazed by Col. Grierson's vast fund of information on all phases of the cotton and rayon industries.

Whither Goes Full-Fashioned?

Statistical bulletin shows Pennsylvania still holds edge over South in number of machines

IN its eleventh annual statistical folder covering the full-fashioned hosiery knitting industry for 1938, the Textile Machine Works, Reading, Pa., states that there were 16,110 machines in place at the end of the year. This figure compares with 14,310 machines at the end of 1929.

A series of interesting charts breaks down the mechanical equipment of the industry according to several points of interest. Taking the figures from the charts, there is now installed in the South about 29% of total full-fashioned machines; in Pennsylvania outside of Philadelphia there are about 31% of the machines and in Philadelphia about 15% of the machines. In 1929 the South had only 8% of the machines, Pennsylvania outside of Philadelphia 21% and Philadelphia alone, 39%. Broken down by gauge, the 92,778 footer sections in place in March, 1939, are recorded as being 44.6% 42-gauge, 33.1% 45-gauge, 13.5% 39-gauge, 4.4% 48-gauge, 3.7% 51-gauge and 0.7% 54-gauge.

So far as new installations during 1938 were concerned, the South has a considerable edge on other territories. In that year the South installed new machinery amounting to 21.5% of the machinery already in place. The West installed 3% while the other sections were less than 1½%. Of the total Reading machines shipped during 1938, the South received 72.7% and Pennsylvania 13%. In 1929 the South received 26.3% of Reading's shipments, while Pennsylvania received 51.5%. Machines produced in both 1929 and 1938 were most largely 45-gauge machines, but the next largest in production in 1929 was 42-gauge, while the next largest in production in 1938 was 51. In 1929 the 24-section machine was the most popular, while in 1938 it was the 26-section.

Of the 404 mills in existence in early 1939, 48% have been in existance only since 1930. Only 10% of the industry's present units date their ancestry back to pre-war days. In 1937, 55 new mills came into being; in 1938 the increment was 116. In both years 75% of these new concerns started with old machinery obtained from other sources, while 25% of them started with new machinery.

The statistical analysis closes with a collection of charts showing the trends in silk hose production, prices, etc. and in various classes and types of hosiery. One table shows that knee length goods touched their high point in 1937 and that their volume had turned downward in 1938. Additional tables show trends of imports and exports, employment and wages.

Ten Years of Cotton Textiles

DATA assembled by the Association of Cotton Textile Merchants of New York from Bureau of The Census reports and information obtained through the courtesy of machinery manufacturers. Cloth production for the non-census or even years has been estimated to correspond to spindle hour activity.

	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939
EQUIPMENT											
Spindles in place at beginning of year	35,267,086	34,541,486	33,608,494	32,326,526	31,442,174	30,938,340	30,889,484	29,253,444	27,700,194	26,704,476	25,986,620
Increase or decrease from preceding year	1,198,890	725,600	932,992	1,281,968	884,352	503,834	48,816	1,636,040	1,553,250	995,718	717,856
New installation, additions and replacements	320,784	251,936	205,068	143,908	348,568	529,840	214,874	469,316	772,724	178,280	
OPERATION											
Spindles active at any time during year ending July 31st	32,417,036	31,245,078	28,979,646	27,271,938	26,894,860	27,742,462	26,700,946	24,664,428	25,419,110	24,774,004	
Spindles idle during same period	2,850,050	3,296,408	4,628,848	5,054,588	4,547,314	3,195,878	4,188,538	4,589,016	2,281,084	1,930,472	
Average number of active spindles based on twelve monthly reports	30,408,548	27,269,470	25,674,107	23,250,757	24,873,270	25,119,435	23,421,150	23,373,147	24,079,936	22,042,442	
Intermittent spindles (being the difference between average active spindles and those active at some time during year)	2,008,488	3,975,608	3,305,539	4,021,181	2,021,590	2,623,027	3,279,796	1,291,281	1,339,174	2,731,562	
Percentage relation of average active spindles to spindles in place	86.22%	78.95%	76.39%	71.92%	79.11%	81.19%	75.82%	79.9%	86.93%	82.54%	
Spindle hours run	99,899,724,476	76,702,655,168	77,793,298,853	70,218,347,911	86,580,232,828	75,711,412,882	76,017,361,934	91,773,252,676	95,591,131,816	75,925,187,178	
Hours run per average active spindle	3,285	2,813	3,030	3,020	3,481	3,014	3,246	3,926	3,970	3,444	
MARKET											
Production in square yards	8,398,616,000	6,448,392,000	6,955,391,000	6,278,222,000	7,866,040,000	6,878,579,000	7,135,276,000	8,613,837,000	9,445,736,000	7,502,168,000	
Exports in square yards	564,444,000	416,285,000	366,959,000	375,446,000	302,042,000	226,306,000	186,565,000	200,501,000	236,251,000	319,634,000	
Imports in square yards	61,185,000	35,517,000	34,732,000	29,436,000	41,348,000	41,533,000	63,674,000	114,195,000	147,320,000	58,282,000	
Available for domestic consumption	7,895,357,000	6,067,624,000	6,623,164,000	5,932,212,000	7,605,346,000	6,693,806,000	7,012,385,000	8,527,531,000	9,356,805,000	7,240,816,000	
Population at July 1st	121,526,000	123,091,000	124,113,000	124,974,000	125,770,000	126,626,000	127,521,000	128,429,000	129,257,000	130,215,000	
Available for per capita consumption in square yards	64.97	49.29	53.36	47.47	60.47	52.86	54.99	66.40	72.39	55.61	

Continuous Peroxide Bleach

Powdrell & Alexander makes first installation of new process developed by Du Pont

INSTALLATION of a new continuous process for bleaching cotton piece goods has been made recently by Powdrell & Alexander, Inc., Danielson, Conn. This new process, which was developed by the R & H Chemicals Dept. of E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., has been applied to a variety of light- and medium-weight cotton fabrics including marquisette, print cloth, shirtings, and terry toweling. Equipment for carrying out the process is comparatively simple, consisting essentially of a specially designed heating tube and J-box. The goods are bleached continuously at a cloth speed of 100 yd. per min. Results are comparable to those obtained by the conventional method of kier bleaching with peroxide. Advantages include simplicity of equipment, and marked savings in time, labor, floor space, and chemicals.

Following about two years of experimental work, during which trials were made in a number of finishing plants with portable, semi-continuous equipment, a completely continuous unit was designed. This unit was built by Textile Finishing Machinery Co., Providence, R. I., and installed in the Powdrell & Alexander plant, where the process was demonstrated, on May 19, to a group of editors and other representatives of textile publications.

Process and Equipment

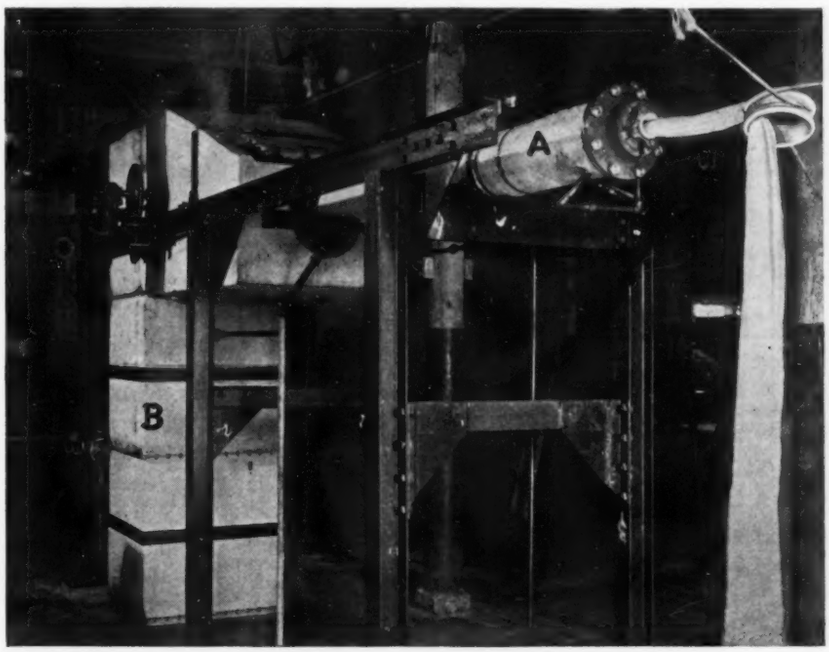
In the case of marquisettes and similar light-weight fabrics, the bleaching process is as follows: The cloth, after having been mercerized in the gray and washed, is run wet at open width through a pad or other suitable equipment containing a solution of hydrogen peroxide. The solution is maintained at a strength of 1.4 to 1.6 volume, a temperature of about 100°F., and a pH of 10.2 to 10.8. In addition to peroxide and sodium silicate, the bath contains a small amount of a wetting agent. The squeeze rolls are so adjusted that the fabric retains between 85 and 125% its own weight of the peroxide solution.

Leaving the padder, the goods go through a pot-eye and then in rope form enter the specially designed heating tube which is the distinguishing feature of the equipment used in the new process. Here they are heated to a temperature of 180 to 200°F. with steam which is admitted to the tube at 30 lb. pressure. The cloth is pulled through the heating tube by means of nip rolls and then piled uniformly into the J-box with a transverse plaiter or pot-eye. The goods remain in the J-box for 1 hr. and are then pulled through an ordinary continuous rope washer where they are soaped. After rinsing, the bleached cloth is ready to be dried.

The heating tube and J-box are constructed throughout of 18–8 stainless steel and are insulated on the outside to minimize loss of heat. The unit (heating tube and J-box) occupies a floor space of 21 x 3½ ft.; and is 18 ft. high at the tallest point. The J-box has a capacity of 6,000 yd. of 4-yd. print cloth, thus permitting a reaction time of 1 hr. with a cloth speed of 100 yd. per min. With lighter fabrics, it is unnecessary to keep the J-box piled to its full capacity. A variable-speed drive permits the speed of the nip rolls, and hence the cloth speed, to be varied, but this has not proved necessary with any of the fabrics which have been handled on the unit thus far. It is possible also to make the J-box in different sizes to accommodate various weights and weaves of cloth.

In the case of goods which require a preliminary treatment, the method used to date has been first to saturate the cloth either in rope form or open width with a solution of caustic soda; run through the heating tube and J-box; rinse; and then repeat the process, using peroxide as described above. An alternative and preferable method is to have two units in range, thus permitting the entire operation to be carried out continuously in one run.

Tests made by Du Pont chemists indicate that fabrics bleached by the new continuous process are somewhat more absorbent than those bleached with peroxide in a kier; and are equal in tensile strength; cupramonium viscosity; and uniformity, degree, and permanency of whiteness. Chemical costs are estimated to be about 60% of those for older methods of peroxide bleaching. On cotton piece goods the process gives satisfactory market whites, bleached bottoms for plain-dyes and prints, and bleached grounds on yarn-dyed fabrics. It is believed, also, that it will be applicable to a wide range of fabrics containing either filament rayon or spun rayon.



Equipment for continuous bleaching in Powdrell & Alexander plant; heating tube is shown at "A"; J-box, at "B"

To Profit from Spun Rayon

A cotton mill should make a market survey and study adaptability of its equipment

By JAMES L. TRUSLOW
Whitin Machine Works

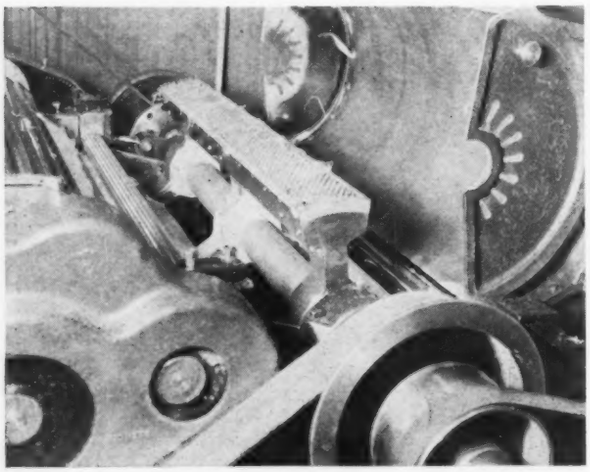
IN STUDYING the possibilities of spun rayon, a mill must first decide whether a profitable market exists or can be developed for the products which it is able to make. Someone who knows the merchandising situation must steer the mill away from overproduced lines and guide its price policy. A stylist with the rare combination of artistic flair and common sense should be acquired if the product is not to consist solely of staple fabrics. At the same time, it is necessary to make a careful study of the equipment of the mill to determine what changes must be made to adapt it for turning out the desired product.

Consider the preparatory and spinning processes used for staple rayon. Since a yarn of given count can be made much more cheaply on the cotton system than with worsted machinery, the tendency has been to run staple fiber along cotton mill lines whenever possible. The limiting factor has been the length of fiber which could be handled. A great deal of research effort has been expended during the last two years in modifying cotton machinery to take longer and longer staples. This has been quite successful, and the modified cotton equipment is quite capable of handling pure worsted in staple lengths up to at least 2½ in.

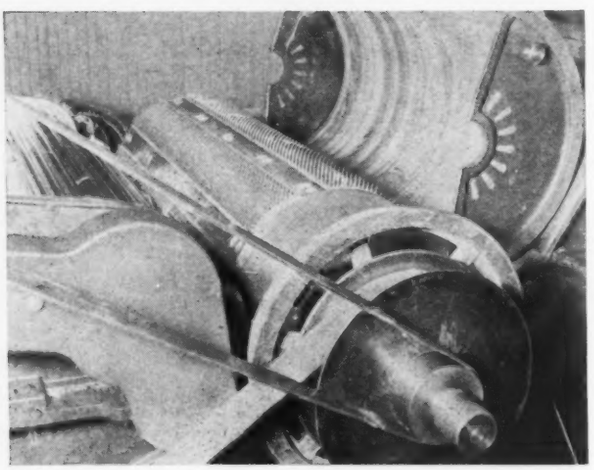
For staples of 3 to 3½ in., it is practical to prepare tops on the worsted system from pure worsted, pure rayon, or from blends of the two materials. These can be fed as sliver to cotton-type drawing frames and the product run on modified cotton roving and spinning processes. This procedure gives a large saving in cost of manufacture as compared with that of the conventional worsted mill. However, worsted machinery still has a field in staples of 4 in. or longer.

Suppose a typical cotton mill is set up to run print cloths and it is desired to operate on 1⅛-in., 1.5-den. rayon staple. Such a conversion is easy. The catch is that it is too easy. Everyone has been doing it, and such a mill will find itself in a highly competitive field. The only hope for such a plant is to make itself an outstandingly low-cost unit. It is still to all manufacturing intents and purposes a cotton mill, and the answers to its problems are the standard cotton-mill answers. Long-draft spinning, long-draft roving, one-process picking—all of these things will help just as they would with a cotton mill which had never heard of spun rayon. One advantage should be noted—a mill such as we have described has burned no bridges. It can go back to cotton at any time.

The type of single-process picker used depends on the type of stock run. If it is full of shiners or matted groups of fibers, a two-beater machine is necessary. Such a picker might have a Buckley or, better yet, a pin beater in its first section. This pin beater is similar to that employed in the cotton roving waste opener. Next would come an intermediate feeder to give additional blending and to feed the finisher section. The second beater might be a Kirschner to give a smooth lap, unlikely to split on the card. Beater speeds should be low, say 400 to 500 r.p.m. Every projection inside the picker which could collect tails of fiber should be eliminated. The tension on the lap rack heads should be very light. Paper tubes should be used over the lap rod when it goes to the card. The grid bars should be replaced by smooth sheets of metal with proper provision for the entrance of air through a slot running



Kirschner beater used as second beater in special rayon staple single-process picker for making a smooth, homogeneous lap



Pin type beater used as first beater in special rayon staple single-process picker to comb stock from feed rolls and open groups of matted fibers

Abstract of a paper presented at a meeting of the American Association of Textile Technologists, held May 3, in New York.

across the full width of the beater.

Some of the features just mentioned may seem needless to the average mill on cut staple but on difficult mixes and long fibers they are very helpful. For well-prepared cut staple and for delicate fibers such as acetate, a single-beater one-process picker receiving stock from a tandem feeder is best. Picking on staple fiber runs best with a regain of about 8%, which means that adequate humidifying equipment should be installed.

In one corner of the picker-room floor, two old-type finisher pickers might be installed for making lap mixes. These will prove useful for mixes where each ingredient appears in large proportions, especially 50–50 mixes.

Most of the production of the mill can be handled successfully on cotton cards fed by laps from the pickers. Many mill men have found it desirable to replace the lickerin screen with solid sheet metal, and the lickerin should be slowed down to about 190 r.p.m. Some of the cards should have strip-clothed fancies which can be put on when needed to take care of certain blends and types of stocks. The settings are a matter for experiment and should be watched closely. An important setting is that of the front plate, which can be adjusted to throw out neps and pills onto the flats.

To give flexibility in handling small lots, dyed stock, and other special cases, the mill may have a unit of cotton cards equipped with woolen-type weighing feeders. These are expensive and take up floor space, but the mills which have them swear by them. With these cards, the stock does not go through the picker, but is fed directly from the bale or mix into the hopper on the back of the card.

Now consider the drawing frames, which will be found to be of the metallic roll variety. They will be stripped down to the roller beam and fitted with roll stands permitting wide settings. Also, they will be equipped with large-diameter steel rolls and cushion-type top rolls. Some special creels should be built to place behind these frames when needed to feed them with worsted top.

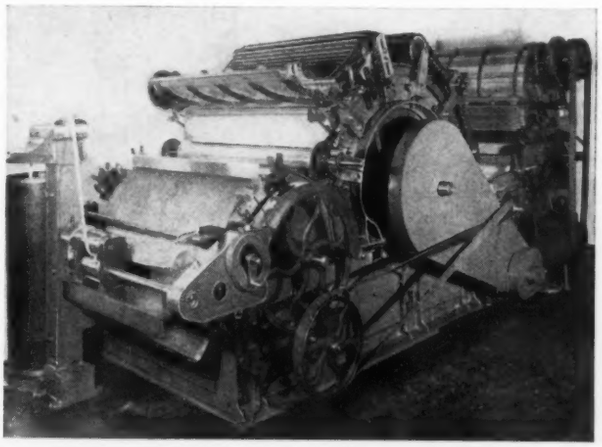
Undoubtedly, some blending will be done behind the drawing frames. This is a good place to mix in some single ingredient in small quantity; for instance, a single sliver to five slivers of the main ingredient. If larger proportions are mixed at this point, the yarn is likely to have a streaked or cored appearance.

The slubbers and first intermediates would be sold or scrapped and replaced with up-to-date equipment, such as 8x4-in. Super-Draft roving frames capable of making everything up to 4.00 hank directly from drawing sliver. These frames would be equipped with the special drafting arrangements recently developed for spun rayon, permitting the use of all staple lengths from 1½ to 3 in. and any desired mixture of staple lengths within this range.

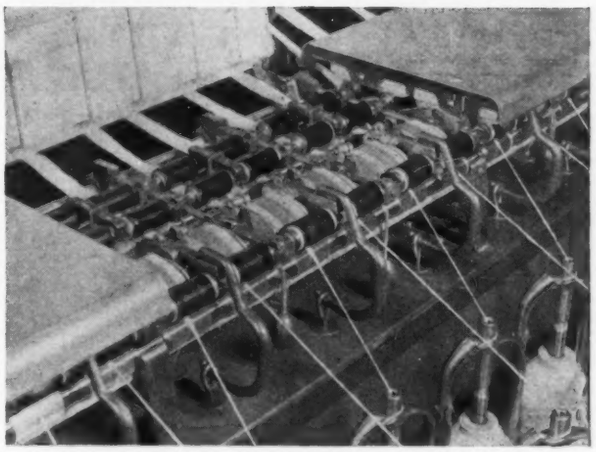
If there were on the floor a sufficient number of first intermediates in good condition, they could be converted to long draft, so that it would not be necessary to buy new frames. Some of the second intermediates might be kept to make fine hanks.

Modern spinning frames with tape drive and proper space between the spindles to permit the building of adequately large warp bobbins, justify the use of special long-draft spinning attachments developed particularly for rayon staple. Large-diameter front steel rolls, roll stands for wide settings, and large-diameter top rolls to prevent lap-ups are used, and double-apron long-draft units replace the middle rolls.

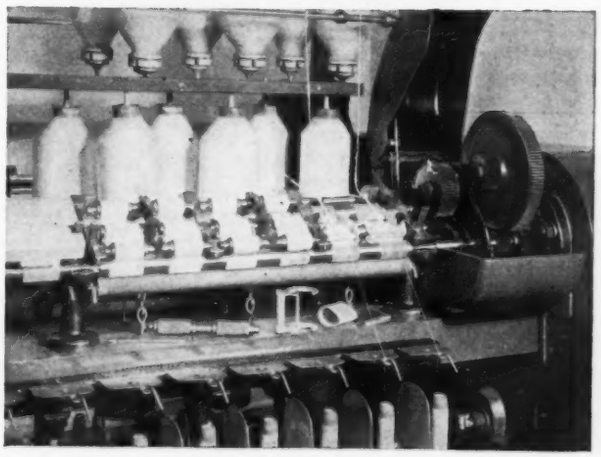
The mill described above can spin almost anything with low manufacturing cost and high quality—viscose, acetate, flax, tussah, ramie, cut worsted top, uncut short worsted top—all of these fibers and blends of any of them.



Cotton card with fancy, fed by woolen-type weighing feeder; with this arrangement, no picker is needed



Special rayon staple Super-Draft roving frame designed to run long staples



Spinning frame with long-draft attachments

Topper Learners

Can be made nucleus of better-trained force of full-fashioned hosiery machine operators

By RUSSELL D. COLLINS

IN A FULL-FASHIONED hosiery mill the toppers are among the most important of the workers who are necessary to keep the plant operating on a normal, successful basis. It is surprising, therefore, that more thought has not been given to the possibility of hiring a larger percentage of young men as topper learners. Such a plan has a double advantage. It helps to solve the problem which every mill faces of making sure that a sufficient number of toppers are on the job every day; and it aids in the development of trained operators for the leggers and footers.

There is no question that girl toppers predominate in numbers throughout the industry; and this is as it should be. On the other hand, there is more room for young men to be brought in and taught the trade from the very beginning, which is on the topping stand.

Many superintendents and overseers have found that girls are far more likely to stay away from work than are ambitious young men. For example, unless a girl is in real need of money, which makes it imperative for her to work regardless of how she feels, she may decide to stay home if only slightly indisposed. There are exceptions, but they are few and far between. Records kept by the writer in three different plants show that only one girl topper in every six employed can be depended upon to be on the job day in and day out without being absent more than once or twice in a year. Perhaps there are some mills which are more fortunate and have a somewhat higher percentage of really dependable girl toppers.

Importance of Toppers

The importance of the toppers is realized most when several of these skilled employees fail to report without having given any previous warning. Sometimes when an excessive number of toppers are absent at once, it may be necessary to let a footer remain idle for the day. This not only means that other employees may have to lose a day's work, but it may mean that the company will lose production which is urgently needed to fill an important order on schedule.

In some cases when only one or two girls are absent, the overseer in charge

A young man who has been trained as a topper will usually develop into an excellent legger operator

of the knitting room will have enough extra help to fill in for them. Often, however, the foreman is working under a limited budget, which does not permit him to have extra toppers who are just hanging around doing odd jobs while waiting for somebody to stay away from work on account of illness or for some other reason. Every mill, large or small, has some method of coping with the problem of having sufficient toppers. However, any plan that calls for employing extra toppers is bound to be expensive. For example, the overseer may have to invent jobs to keep these girls busy until they are actually needed. Again, these extra toppers cannot be placed on any job of great importance, because that job would suffer if they were called away from it, even for a day. Eventually, these girls are given regular topping jobs, but then others must be hired to take their places as extras, and the same condition still exists.

In general, footer operators are more reliable than are toppers. Moreover, in most mills, if a footer fails to report for work, there is usually a helper who is able to run the machine during the absence of the regular operator. Hence, it is the undependable topper who is most likely to disrupt the day's work.

Advantages of System

The writer does not mean to imply that if all of the toppers were young men, the mill would completely solve its problem. The system of hiring some young men as topper learners does, however, have advantages, other than the fact that on the whole they are steadier workers than are girls. Many companies make it a practice to hire young men and train them to become machine operators so that they can fill vacancies when they occur. The writer believes that instead of putting these young men to work on machines as learners the first day they are hired, it would be much better to start them as topper learners.

It is much easier to learn to top than it is to learn to operate a machine. As a rule it takes only a short time to determine whether one will make a satisfactory topper, but it may take months to decide whether one will develop into a good operator. There are certain people who can never learn to be really good operators, and the money spent in attempting to teach them to knit is practically wasted. In most cases, if such young men had been started on a topping stand, they would have been sifted out quickly. Ordinarily, if one cannot learn to be a good topper after a reasonable length of time, he will never be a good operator. There are exceptions to this rule, but in general it is not profitable for a mill to attempt to make operators out of learners who have failed at topping. Conversely, a man who proves to be an excellent topper will usually become a good operator after proper training.

The young man who is first taught to top has a chance to get the "feel" of a knitting machine long before he is put on one as a helper. The things

he learns about the business while topping are legion. Often he will go out of his way to acquire knowledge that does not seem worth while to one who is started as a helper on a footer or legger. He will learn to plier needles, take care of the topping stand and transfer bars, and make all of the changes on the machine necessary to produce a stocking.

Make Good Leggers

Young men who start as toppers need not necessarily be placed on footers when the time comes to promote them. As a rule, they make very good legger operators. One advantage in putting them on leggers is the fact that they are experienced and adept at topping and will not shirk that duty when they have a press-off. On the other hand, one who has just been taught to be an operator, without any previous experience as a topper, will often run a bad stocking from the welt to the loose course in the heel, just because he cannot re-top on the machine quickly enough to make it profitable for him to do so. This results in a large and unnecessary waste of silk.

Some plants have had difficulties with young men who have been hired as topper learners. What happens is that the toppers become obsessed with what might be termed a "knitters complex." After they have topped for a short time, they get the idea they are doing a girl's job. As a result, they are continually bothering the overseer with requests that they be placed on a machine.

There is no doubt that a young topper with a knitter's complex is a nuisance. The time to prevent this is when the young man is first hired. He should be made to see that topping is an important job. He should be informed definitely that he must expect to be a topper for about three or four years, and then, if he has made good, will be advanced to a more lucrative job as a helper on a legger or footer as soon as there is an opening for him. He should be made to understand that even when he is promoted to a helper's job, he is still subject to call at all times as a topper until he is finally made an operator. He should have it made clear to him, however, that the last one who is promoted from topping will be the first one who must go back to topping if it is necessary to fill in when one or more of the girl toppers fail to report for work.

It is obvious to anyone who is familiar with the operation of a full-fashioned hosiery mill that the system of hiring young men as topper learners will save money for the company. In addition, it will result in less disruption of the knitting room through frequent absences of toppers. Most important, it will assure the mill of a nucleus of young men who can eventually become good machine operators.

Hosiery Imperfections

Photomicrographs reveal blemishes not readily visible to the eye

CERTAIN imperfections which occur in full-fashioned hosiery may be serious enough greatly to impair the wearing quality of a stocking and yet not be readily detectable with the naked eye. However, when photomicrographs are made, such imperfections not only become quite apparent, but their type is easily recognized. Typical of these defects are those shown in the accompanying illustrations. Fig. 1 shows sinker streaks, the result of improper functioning of the sinker in the formation of its loops. Fig. 2 shows a knot in the yarn which has caused it to loop and double; this is a frequent cause of seconds. Photomicrographs are useful also in familiarizing inspectors, pairers, and folders with the more common defects met with from day to day. Accompanying photomicrographs were made by Hatch Textile Research, Inc., fabric technicians and consultants, 25 East 26th St., New York, and are reproduced by courtesy of that organization.

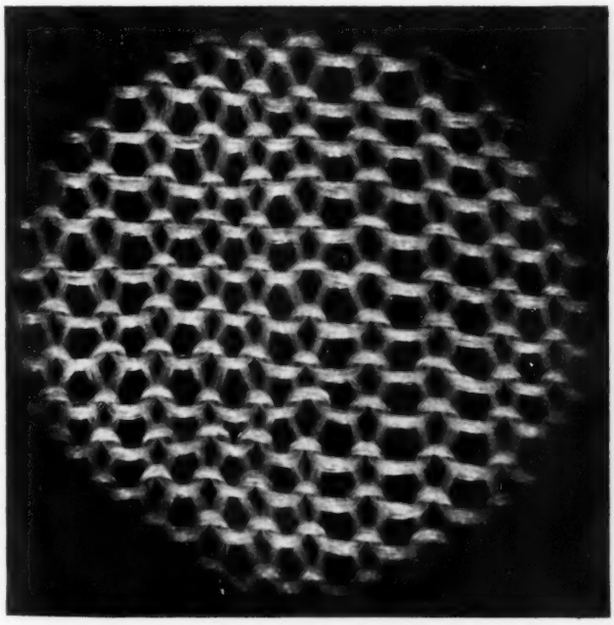


Fig. 1. Sinker streaks

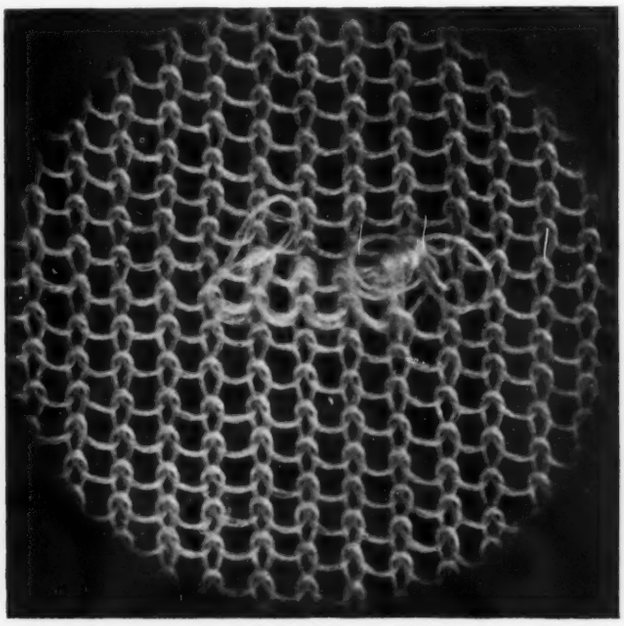


Fig. 2. Knot in yarn

Cotton Fabric Defects

Prompt and systematic check of cloth leaving weave room helps maintain quality standards

BY THOMAS NELSON
North Carolina State College, Raleigh, N. C.

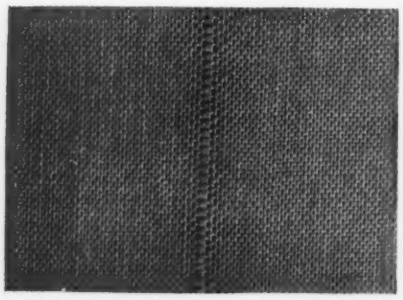
IT IS OFTEN said that on fine goods look for quality and on coarse goods look for quantity, but whether fine or coarse, quality should not be sacrificed for quantity. Every mill should have a standard and that standard should be the highest attainable. One of the secrets of maintaining a standard is constant vigilance, not only in the weaving of the fabric, but in the preparation of the yarn for the weave room.

However, many defects are made in the weave room even though good yarn may be supplied. In order to check on these defects, a mill should have a record of the quality of goods made, and the record should include all known defects peculiar to that mill, and also other defects as they occur. This record should be obtained just as soon as possible after the cloth is taken from the looms, and the logical place is at the inspector's board in the cloth room.

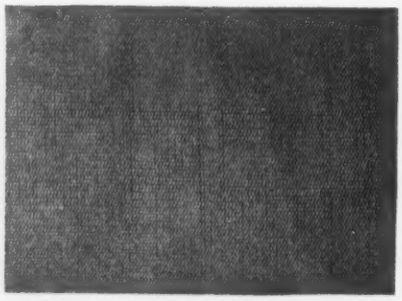
Defects are recorded by the cloth inspector when the cloth is being examined. The form of record blanks used for recording defects will vary according to the product of the mill. A typical record blank is illustrated at right. As the inspector examines fabric, he or she will record the loom number and indicate the defect under the correct heading. The defect in the fabric can be either marked with a colored pencil or flagged with a narrow strip of paper. If paper is used, it is pasted at the selvage near the defect and protrudes outward so as to be seen easily by handlers.

If a record of defects is kept, it is possible to check, not only the number of defects made per day or week, but also the looms on which these defects occur. For example, if a certain defect, such as uneven cloth, appears on one section of looms, it will be evident that the loomfixer is weak on a certain point or that some general defect has developed on that section. Again, smashes, which might be due to breaking of harness eyes, broken or cracked picker sticks, etc., may occur. If these continue to occur, a remedy can be soon found.

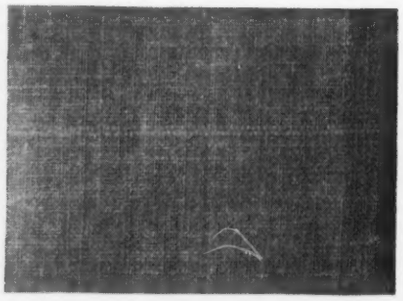
The accompanying illustrations and captions show some of the more common defects and indicate the usual causes of each.



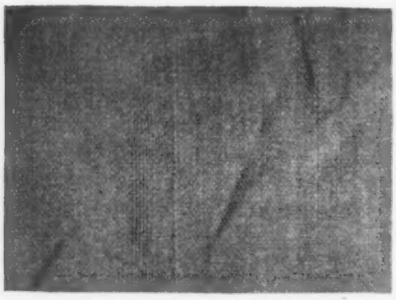
Wrong draws—Caused by the drawing-in hand's failing to follow the drawing-in draft, or by the weaver's drawing a warp end in the wrong heddle eye or reed dent after the end has broken out on the loom



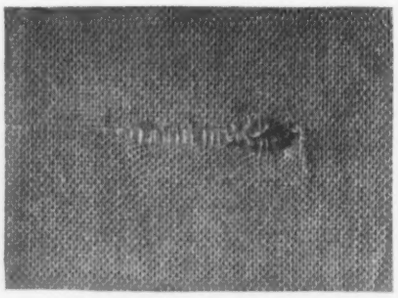
Uneven cloth—Caused by poor let-off of the warp yarn whether by friction or geared let-off, or may be caused by the reed's being in poor condition with some of the dents bent out of their proper shape



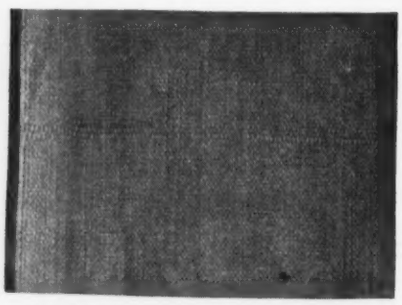
Mispicks—Caused by the shuttle's skipping over or under the ends as formed by the harness shed or by the weaver's running his dobby chain too far forward or backward after making a pick-out



Scratch-up in the warp—Caused by the weaver's failure in an attempt to comb or scratch the ends together after pulling out of the cloth some ends which were floating together



Slugs (or **Slubs**)—Caused by thick places or bunches in the yarn. (This defective yarn is caused by fly, or by loose cotton from the clearer board on spinning frames, being twisted into the yarn)

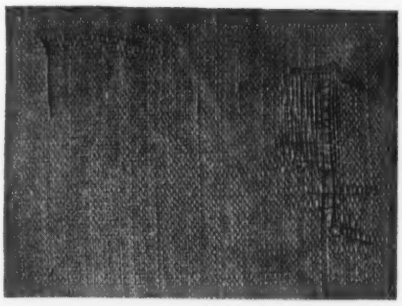


Jerked-in filling—Caused by shuttle's catching filling as it enters the shed, so that it loops and doubles near the selvage; a result of weaving on a loom that is too wide for the fabric

INSPECTOR'S REPORT ON BAD WORK IN WEAVE ROOM

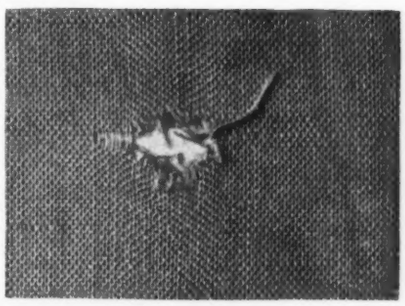
Date	Loom	Scratch Ups	Thin Places	Ends Out	Thick Places	Floats	Holes	Slugs	Uneven Cloth	Stiching	Hard Size	Curled Selvage	Harness Smashes	Wrong Draws	Mis-picks	Oil Spots	Jerked-In Filling

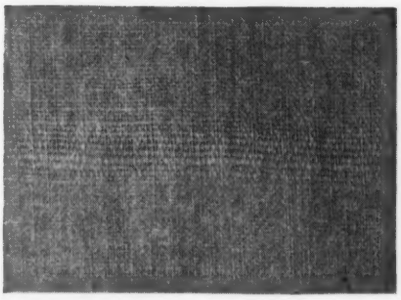
Use of the inspector's chart is described on the opposite page



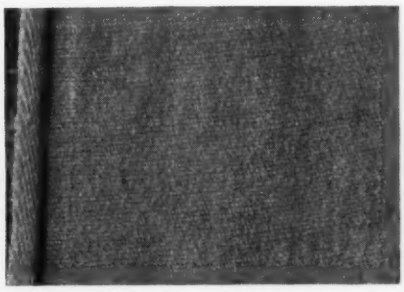
Floats—Caused by broken ends becoming entangled with other ends and preventing them from forming a shed so that the shuttle is unable to lay the filling between them (Left)

Holes—Caused by drawbacks; i.e., ends being caught behind the drop wires or lease rods so that the warp and filling break at this point during finishing (Right)

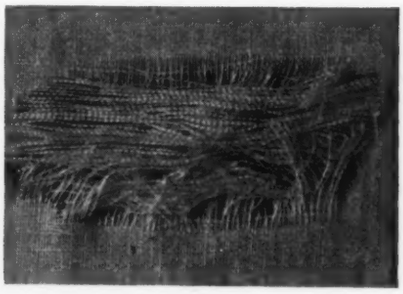




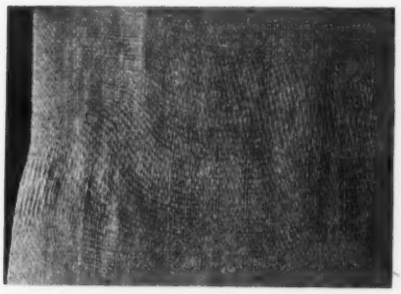
Thin place—Caused by the loom's being out of order, probably the filling fork or the transfer was not working properly



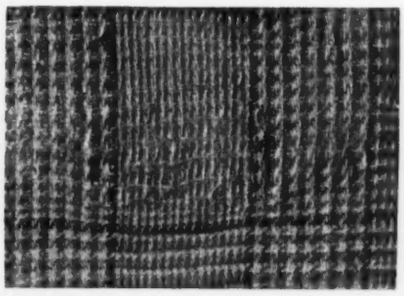
Curled selvage—Caused by selvage ends being drawn on the same harness shafts as the body of the cloth when weaving twills, etc.



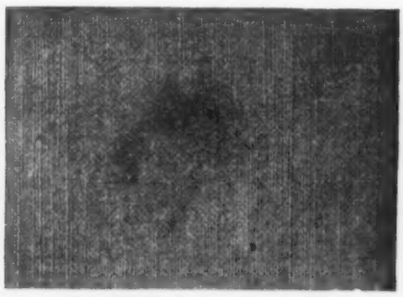
Harness smashes—Caused by breaking of one or both harness straps, permitting the harness to drop and break out warp ends



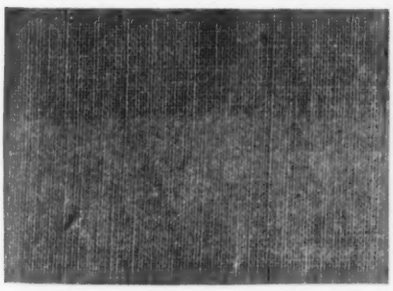
Scratch-up in the filling—Caused by the weaver's failure to bring picks together over empty or thin place



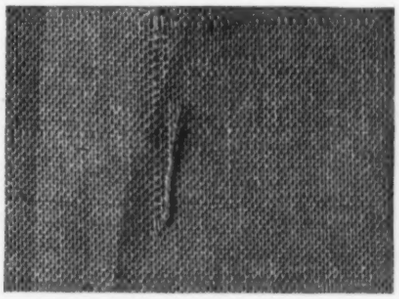
Hard size—Caused by warp's remaining immersed in size box while slasher is stopped



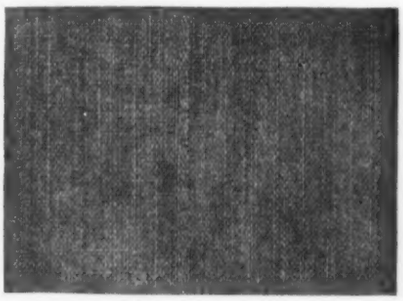
Oil spots—Caused by the loom's being excessively oiled so that oil drops or is thrown onto the cloth



Thick places—Caused by weaver's failure to let the cloth back the correct distance after a pick out or loom bang-off



Ends out—Caused by warp ends breaking out without stopping the loom, due to defective stop motion



Stitching—Caused by one or two ends not weaving correctly

Double-Shuttle Carpet Weaving

Worth careful consideration; production increases, economical operation are important advantages

By JOHN R. BLINTON

DOUBLE-SHUTTLE carpet weaving is in various stages of development in several mills today. While the double-shuttle carpet loom has its limitations in the variety of weaves which can be produced on it, nevertheless its scope is broad enough to include many qualities that are volume sellers in the lower- and middle-price brackets. On plain work, excellent grades have been produced; and continued development will no doubt make possible further improvements.

Comparative simplicity, economy of operation, and large productive capacity are the factors that provide decided advantages over conventional wire-looms. The loom weaves two carpets at the same time, the pile yarn being bound alternately by the filling of the top and bottom fabrics, much the same as in the weaving of double-shuttle plush.

The two carpets are split, or cut apart, 6 in. from the cloth-line, by a knife so set that it cuts the pile exactly halfway between the two backing fabrics (see Fig. 1). The two carpets then proceed around separate take-up rollers on to the carpet rolls. The method of cutting the pile is simple and efficient. It eliminates the wires and wire-motion of the wire loom, saves floor space, and makes possible better loom placement and alignment.

The double-shuttle loom, on a two-shot construction, requires for plain work only four harnesses; namely, one pile, one stuffer, and two chain or binder. The stuffer and chain harnesses employ double-eyed heddles, the eyes being so spaced that they take care of the warp ends of both the top and bottom fabrics. This arrangement, shown in Fig. 2, makes possible use of half the number of heddles and harnesses which would otherwise be required, and simplifies the entire shed structure.

Pile yarn is delivered by a ratchet-driven pile-roller located at the back of the loom. This roller controls the height of pile of the two carpets by letting off a given amount of yarn with each pick; the tension of the warps weaving the top and bottom cloths, which are constantly pulling away from each other, eliminates the necessity for gages to control pile height.

With regard to production, the 12/4 (9 ft.) loom, on plain- or printed-warp work, throwing two shuttles, runs efficiently at 60 beats per min., or a total of 120 picks. It will average 40 yd. per 8 hr. day of a 10-wire, two-shot quality. In the ¾ (27 in.) and 4/4 (1 yd.) widths, a loom speed of 80 beats or 160 picks per min. is achieved.

In the weaving of jacquard-figured carpets of the Wilton type, two jacquard machines are employed, one placed directly behind the other. These are set at right angles to the loom so that the pattern cards, instead of being over the weaver's head as in the wire-loom, are over the motor at the side of the loom. In a 5-frame job the front, or negative, jacquard takes care of two of the five frames and so operates that when neither of these two frames is weaving in the pile, the yarns are woven into the back of the top carpet, with the stuffer warp. The back, or positive, jacquard takes care of the other three frames; their yarns are woven into the back of the bottom carpet when not weaving in the pile. The ground or predominating color is generally put on the positive or three-frame jacquard, in order to equalize the over-all weight of the two carpets.

When a color controlled by the negative machine is called on to weave in the pile, the yarn is carried from the top fabric through to the bottom shed, engaged by the inside shot of filling, and immediately lifted to the top shed, to remain there until again called on to weave in the pile. Colors controlled by the positive machine are lifted from the bottom shed, caught by the inside shot of filling in the top shed, and lowered again to the bottom before the next pick is inserted, there to remain until again required for formation of the pile pattern.

Both jacquards rise and fall together. They are operated by one set of levers connected by a draw-rod to a crank at the cam side of the loom.

In jacquard looms stationary gages control pile height. One gage is

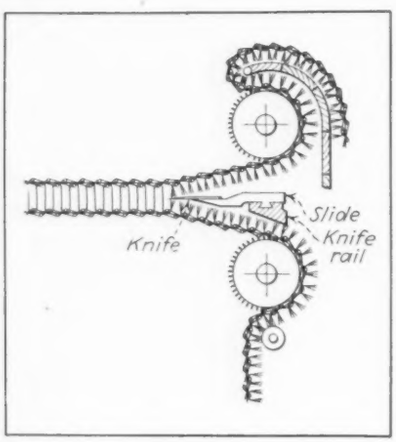


Fig. 1. Method of cutting pile yarn in double-shuttle carpet weaving

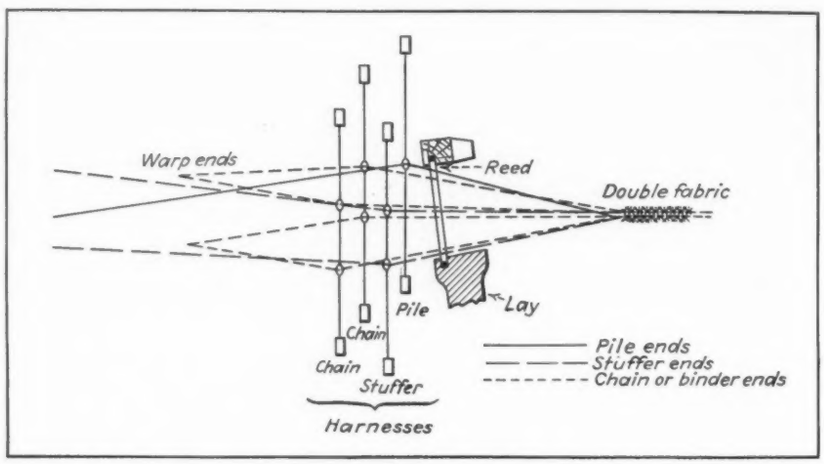


Fig. 2. Shed structure of plain-fabric, double-shuttle carpet loom

placed in each dent of the reed and fastened to a special heddle hung between the lay and the pile harness. At the front, the butt end of the gage rests between and separates the backs of the top and bottom carpets. The pile yarn, always under tension, tends to pull the two backs together; and the gages, holding them apart, thus determine the pile height. The gages are so shaped that their highest part is at the cloth line. This height is maintained for ½ in. inside the cloth line to insure uniformity of pile height and to allow the pile yarns to become set. The gages then taper off slightly, permitting the fabric to slide off the gages without undue binding.

Pile ends are drawn from vertical or upright creels (Fig. 3), as compared to the horizontal or shelf-creels commonly used in wire-loom weaving. The upright creels are more accessible and yarn changes are more quickly made. They also permit the use of large packages of yarn, as wound on paper tubes by modern high-speed winders, compared to the small-capacity, flanged wooden spools ordinarily used.

From the creel the yarn travels through a converging frame which brings it into approximate alignment with the harnesses. This frame is equipped with drop-wires, which are electrically connected to a bell which warns the weaver when an end is down. The wires are fairly heavy and act as a pullback for the pile yarn in case un-weaving is necessary. The bottom chain warp is also equipped with drop-wires.

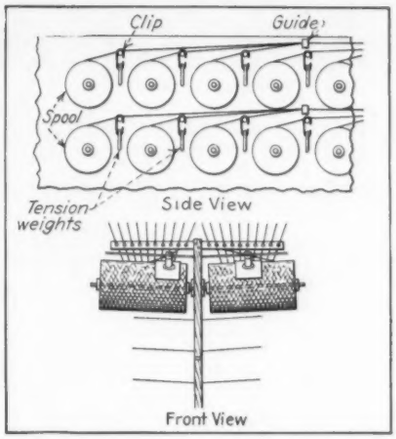


Fig. 3. Diagrammatic view of pile-yarn creel used in double-shuttle weaving of carpets

The stuffer and chain harnesses in the jacquard loom are located directly behind the pile harnesses and, like those of the plain-fabric loom, contain double-eyed heddles.

Production, of course, is less than that possible on the plain-fabric loom, but is still far above that of wire-looms. A 5-frame, 13½-wire, 2-shot quality will average 26 yd. per day in 12/4 width.

The question of shed clearance is often brought up in discussions of this method of weaving. It is a logical one because, with so much yarn passing through the loom, the practical man immediately thinks of pile-skips and shuttle undershooting, especially in the wider looms. It is true that twice the number of stuffer and chain-warp ends are weaving at the same time, compared to those in a wire-loom. But it must be understood that the warp for the top carpet and the one for the bottom carpet form their sheds in different planes. They never cross each other; only the yarns actually producing the pile pass through both sheds.

Good firm selvages presented difficulties for some time, but a simple warp-shedding motion on each side now accomplishes the purpose nicely.

Excessive weight in the loom structure and parts is not necessary. In fact, the double-shuttle looms operating successfully today are not much heavier than wire-looms. Reinforced lay swords, a deep channelled iron lay that is strong without being too heavy, a sturdy crankshaft, and a rugged take-up motion are the prime requisites for smooth and dependable weaving.

Carbonizing Wool-Acetate

Pre-saponification of mixtures suggested

RECENTLY a number of woolen mills have encountered difficulties in carbonizing wool-acetate mixtures. This is due to the fact that the acetate rayon, being resistant to acids, is not destroyed by the usual carbonizing processes. It has been found, however, that if the cellulose acetate is first converted by saponification into regenerated cellulose, it can then be completely carbonized with sulphuric acid and removed from the mixture.

It is a well-known fact that cellulose acetate can be saponified by treatment with caustic soda at an elevated temperature. Several methods for saponifying the acetate in wool-acetate mixtures were suggested in the March, 1939, issue of the *Ciba Review*. One of these consists of treating the mixture for 2 hr. at about 140 to 160°F. in a solution containing approximately 4 lb. of caustic soda (36°Be.) and 1½ lb. of soap to 100 gal. The material is then carbonized with 5°Be. sulphuric acid. It is noted that care must be taken not to damage the wool and, for that reason, it is recommended that the saponification be carried out at not too high a temperature.

Although caustic soda is commonly employed for saponifying acetate fabrics which are to be discharge printed, various other alkalis are also used. It appears quite possible that certain of these could be employed for pre-saponifying wool-acetate mixtures which are to be carbonized. Among the alkalis used by rayon finishers for saponifying acetate are included soda ash, trisodium phosphate, sodium phenolate, various sodium silicates, and ammonium thiocyanate.

Frequently mixtures of two or more alkalis are employed. For example, one formula consists of 2 lb. of caustic soda (76%) and 8 lb. of trisodium phosphate dissolved in 100 gal. of water. The material is treated in this solution for 1 hr. at 140°F. Another formula consists of a mixture of sodium phenolate and trisodium phosphate. The sodium phenolate is prepared by mixing 2 lb. of phenol dissolved in water with 4 lb. of caustic soda (76%) also previously dissolved in water. The two solutions should be cooled before they are mixed. The resulting sodium phenolate is then mixed with 100 lb. of water containing 4 lb. of trisodium phosphate. The solution is used at a temperature of 180°F.

It is known also that certain compounds, such as sulphite waste liquor, act as protective agents when animal fibers are treated in alkaline solutions. Such compounds might possibly be used to advantage to minimize the danger of damaging the wool when pre-saponifying wool-acetate mixtures with alkalis.

As yet there are no standard methods for carbonizing wool-acetate mixtures. It is hoped that the suggestions given above will assist mill men in overcoming the troubles which have formerly been encountered.

Finishing Yarn-Dyed Fabrics

Methods for obtaining proper crinkle in seersucker; tests of all colored-yarn goods important

By C. NORRIS RABOLD
Union Bleachery

ONE TYPE of summer suiting which has been quite popular in the past, especially in the South, is seersucker. Garments made from this fabric are cool, as the pucker in the goods prevents them from sticking on hot days and permits plenty of air circulation. On the other hand, a suit made of this material does not press well and hence does not present quite the modish appearance that is desired for men's summer wear today. Also, there is seldom much variation in pattern, as seersuckers for suitings are almost always woven in stripes about ¼ in. wide of white and blue, or white and black. From the standpoint of comfort, seersucker makes a satisfactory summer suiting; from the standpoint of style, it is not popular today. As a result, far less of this fabric is being manufactured and finished at present than was the case a few years ago.

Typical examples of seersuckers are the following: 38½ in., 80x80, 3.80 yd.; 37 in., 90x76, 4.10 yd.; 37 in., 72x72, 4.00 yd.; and 37½ in., 76x76, 4.00 yd.

Shrinking Processes

Seersuckers arriving at the finishing plant in their gray state bear little resemblance to the finished goods, lacking the characteristic crinkle of the latter. This crinkle effect depends primarily upon the fact that the white stripes and the colored stripes are woven from warps under different degrees of tension. Two beams are employed in weaving this cloth—one being subjected to rather considerable tension, while the other is run as slack as possible. When the tension is released, the yarns which were under tension contract or shrink, thus giving the goods a pebbled or puckered appearance.

It is the finisher's job first to obtain the proper crinkle, and then to make certain that in the subsequent processes nothing is done to flatten or otherwise destroy this effect. The methods employed by the finisher for getting the proper pebble into the goods are varied, such processes depending both upon the equipment available, and the size of the lots.

One process for shrinking is to scour the goods in a dolly washer in a hot dilute soap solution for 1 to 2 hr., rinse in hot water, pull over a slack reel, and open up by hand into boxes. Both the soap and rinse water should be as hot as possible. During scouring and rinsing it is inadvisable to use the top rider roll, providing the bottom roll can pull the goods. If it is necessary to use the top roll, it should be run with no more than its own weight.

With certain constructions, the best shrinkage can be obtained by treating the goods in the same type of equipment with a hot 10 to 12° Tw. solution of caustic soda and soap. Following this, the goods are hot rinsed, neutralized with dilute acetic acid, and again rinsed. The success of either of these treatments depends upon keeping the goods in motion through a hot solution. It has also been found practical to keep the goods themselves at rest, circulating the hot soap solution through them, as in a kier. Whatever method is used, the goods should be subjected to a minimum amount of pull while they are wet, thus permitting the yarns woven under tension to contract freely.

Finishing Processes

The drying operation must be conducted on equipment which does not flatten the goods or stretch them, as would be the case with dry cans or tenter frames. Therefore, it is necessary to employ special drying equipment, such as loop or net dryers, which permits the moisture to be driven from the goods while they are under no strain.

Ordinarily this type of fabric is not treated with any finishing compounds, although occasionally a small quantity of softening agent may be added in the last rinse after scouring. It is impractical to apply finishing materials to seersuckers in the regular way, as the pressure of squeeze rolls or nips would flatten the crinkle.

After loop or net drying, the goods are tentered to width, being run into the frame as slack as possible. During tentering the wrinkles and creases incident to the previous drying are removed by steaming or atomizing. Frequently seersuckers are Sanforized. If an attempt is made to Sanforize these goods in the usual way, they would be flattened out, destroying the seersucker appearance. Therefore, if it is necessary to run them between the Sanforizer blanket and cylinder to obtain the proper shrinkage, it is usually done with a slack blanket, the result being that the goods may come off with a slightly flattened appearance.

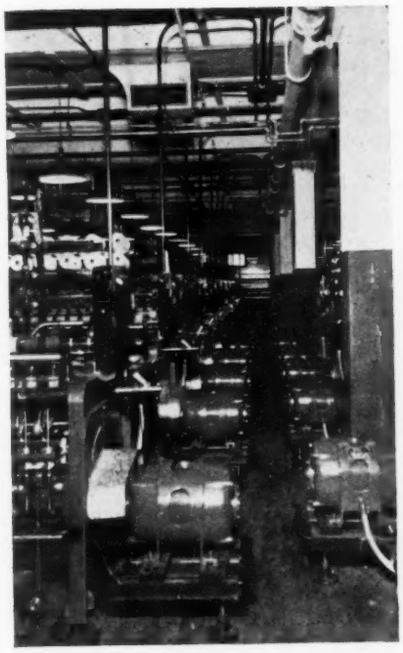
Tests Necessary

In concluding this series of articles, the writer wishes to emphasize that the problems incident to finishing colored-yarn fabrics are much more complicated than they were formerly. Because of the great variety of weaves, classes of dyes used on the yarns, types of dyes applied to the fabrics, and nature of the finish required, it is necessary for the finishing plant to set up a system for rigid inspection and testing of all colored-yarn goods received. When a finisher receives a lot of colored-yarn fabrics he seldom knows positively whether the yarns have been dyed with direct, sulphur, naphthol, indigo, or vat colors. Further, fabrics containing colored yarns may be required to undergo bleaching, dyeing and shrinking processes which the colors are ill-adapted to withstand. Again, the construction of the cloth may not lend itself readily to the usual finishing routines.

It is important, therefore, that laboratory tests be made to determine what class or classes of dyes were employed in dyeing the yarns and then to subject samples of the fabrics to treatments duplicating those used in the plant. Frequently such tests will indicate that the goods cannot be subjected to one or more of the treatments originally planned. In such cases it then becomes necessary to devise procedures which will not cause bleeding of the dyes or other injury to the fabric, but which will give the results desired. If these precautions are taken, many difficulties in finishing yarn-dyed fabrics will be avoided, and the amount of rehandling and seconds will be reduced materially.

Re-Wiring at Aberfoyle

Economy of maintenance feature of $30,000 modernization



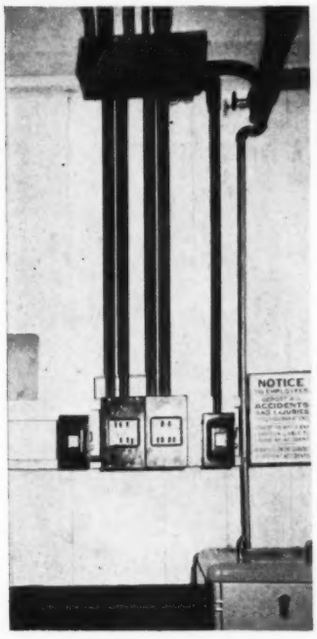
In the twisting department 440-volt circuits lead from ceiling to magnetic motor controls

TWO YEARS AGO, when Aberfoyle, Inc., acquired a 40-year old building in Norfolk, Va., for manufacture of rayon fabrics, it was found that the existing system of open wiring and armored cable was inadequate for supplying the desired standards of illumination and for providing power to productive and auxiliary equipment. Accordingly, plans for the complete electrical modernization of this mill were prepared by the company's engineers in consultation with local power company engineers. Installation work was awarded on this basis to the Batte Electric Co., of Norfolk. In order to provide a wiring system which would be economical to maintain, the old wiring was abandoned in its entirety and new materals were used throughout. Details of this 30,000 re-wiring job, as reported in a recent issue of *Electrical Contracting* and supplemented by additional data supplied by Aberfoyle, Inc., are given below.

Service and transformer capacity was provided to take care of the total machinery area, even though some departments have not completely equipped all their production space. Three Allis-Chalmers 333-kva., 13,200-volt transformers were installed for the 440-volt motors, and three 150-kva. transformers of the same make for the 120/208-volt 4-wire lighting system. The main switchboard for both power and light was supplied by Pringle Electric Co. For weave-room lighting 300-watt inside-frosted lamps with Ivanhoe detachable reflectors are used.

To provide satisfactory illumination, the loom aisles were lighted to approximately 35 foot-candles; other processing areas were lighted to 25 foot-candles; and ordinary work spaces to about 15 foot-candles. In all, about 250 branch lighting circuits were installed, of which 50 circuits were No. 8 wire, and all others No. 10 wire.

Where lighting reflectors were positioned in floor areas directly beneath the looms, it was necessary to protect lamps from harmful vibration. Lighting units, in areas where no excessive vibration existed, employed rigid conduit stems with self-aligning fittings. The stem-suspended reflectors were of the twist-out type to permit quick removal for cleaning. Lighting distribution centers were supplied by Trumbull Electric Co.



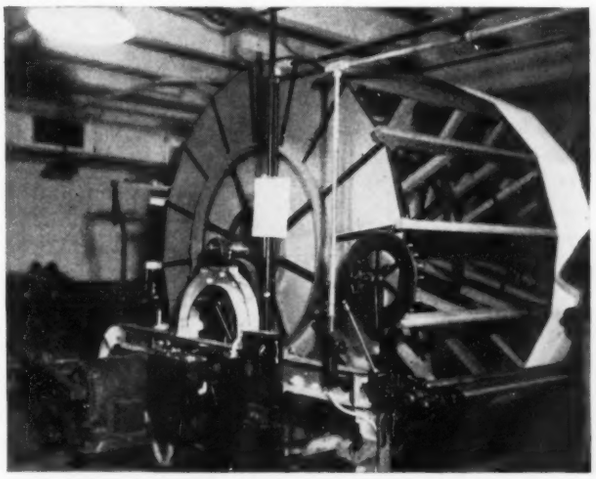
Easy moving of load centers was a requirement to permit changing of partition in the future; overhead junction boxes collect radial conduit runs to avoid expensive pipe changes later at panels

There are sixteen Cleveland Switchboard Co. power distribution panels of a design which permits the removal of all parts without taking off the cabinet front. All lighting branch circuits employ circuit breaker protection. All of the distribution centers were installed with junction boxes directly above them for collecting the horizontal feeder and branch conduit runs. With this arrangement it is possible to change partitions and move panels with a minimum cost in rearranging the conduits.

Humidification controls are located in various areas to regulate their respective conditioning units automatically. Many special controls for motors and for protecting breaks in warping and other operations were installed.

Careful application of the 600 motors in operation—none over 30 hp.—is indicated by the fact that at peak load the power factor was 94% while during off-peak periods the readings ranged between 80 and 85%.

There were installed also signaling equipment of various low-voltage types: a clock system; watchman's clocks, night lighting, and departmental telephones that operate through the main office exchange.



Warpers, which are driven by multi-speed motors, required installation of relay-operated auxiliary control and signaling stations

At Three S.T.A. Meetings

Mill men discuss spun rayon; carding and spinning; spindle lubrication

CHANGES necessary in the picker and opener room when switching over from cotton to spun rayon, long-draft roving, new equipment at Greenville Show—all came in for rapid-fire discussion at a meeting of the Piedmont Division, of the Southern Textile Association held recently in Charlotte, N. C. B. M. Bowen, superintendent of Salisbury (N. C.) Cotton Mill, presided. Discussion was led by Marshall Dilling, secretary of the association, and superintendent of A. M. Smyre Mfg. Co., Gastonia, N. C.

Spun Rayon Discussed

J. L. Brannan, Hermitage Cotton Mills, Camden, S. C., recounted his experience in changing over to spun rayon. In one instance he changed the finishing picker by cutting out two beaters and using the third section as a carding beater with 200 r.p.m. on beater and 1,000 to 1,100 r.p.m. on fan. The beater was set $\frac{3}{16}$ in. from the feed roll. In order to make the lap pin withdraw easily and eliminate the use of tubes, he tapered the pin from 2½ in. diameter down to 2¼ in. An evener was fastened to the side of the hopper. Speeding up the apron and turning the screen-grid bars upside down also contributed to the excellent results obtained. Mr. Brannan was running 55-oz. lap 50 yd. long, making 64/60 print cloth. "It looked equally as good as combed stock in 1¾-in. cotton," he said.

J. O. Williams, superintendent, Shelby (N. C.) Cotton Mills, said he had found from experience that they have to start in the picker room to get the results they want. One change he found necessary was cutting the speed of the apron at the back of the hopper. "We find that three processes give a much better piece of goods than two do," he said.

Mr. Williams also stated that bad yarn often resulted from worn travelers. "We run three shifts," he said, "and have to change travelers every five days." He uses a traveler the shape of a half moon. When asked the percentage of waste put back into his product, Mr. Williams replied that they put practically all the waste back, but did not run it in fine numbers. In order to eliminate strips, Mr. Williams said that they set the stripping plate, slow the flats down, and in that way have eliminated practically all the strips. Such strips as they do have, they run in coarse numbers and plated yarns.

In discussing the best break-draft on long-draft roving frames on $\frac{15}{16}$-to 1-in. cotton, Mr. Bowen said they had some trouble when they started their frames. They finally changed the back- and the middle-roll gears to the same thing. The only draft remaining was the thickness of the apron. They had three rolls. This helped them on the $\frac{15}{16}$ to 1 in. cotton. Mr. Williams, being questioned about the proper size for rayon, replied that he used the same size for cotton and rayon, and that corn starch size in his opinion was satisfactory. He stated that he did not get any more shedding from the rayon than from cotton, but that they used less size on the rayon because rayon absorbs very quickly.

A lively discussion of new equipment featured at the Southern Textile Exposition was followed by the recommendation of the nominating committee of re-election of present officers for an additional term. The only change recommended was replacing Mr. Edwards of Laurel Hill, N. C., who is moving to Florida for an indefinite period. In his place, John A. McFalls, of Rockingham, N. C., was nominated. B. M. Bowen, Salisbury, N. C., was re-elected chairman; J. L. Brannan, Camden, S. C., R. B. Cook, Mooresville, N. C., M. T. Poovey and John A. McFalls, Rockingham, N. C., and A. W. Benoy, Shelby, N. C., were again elected to the executive committee.

Carding and Spinning

THE South Carolina Carders & Spinners Division of the Southern Textile Association held its regular spring meeting at the Franklin Hotel, Spartanburg, S. C., May 13. Approximately 125 members and guests attended. J. A. Lyons, superintendent, Orr Cotton Mills, Anderson, S. C., presided.

L. Mell Glenn, secretary, Chamber of Commerce, Greenville, S. C., discussed the tax situation in the State and urged careful study and active participation on the part of all members in order to bring about needed reforms. Brice Waters, administrator, South Carolina Unemployment Compensation Commission, then discussed the practical application of the Unemployment Compensation Law. "The law is very complex, very complicated," he said, "it needs a great deal of simplification." Amendments have been proposed to bring about some measure of relief, but they have not yet passed the legislature.

Robert T. Stutts, superintendent Woodside Cotton Mills, Simpsonville, S. C., conducted the discussion on carding. Mr. Stutts first proposed a discussion of changes in opening equipment to secure better blending or cleaning. T. M. McNeill, superintendent, Monarch Mills, Union, S. C., said that for many years he had the conventional type of opening equipment consisting of two units, No. 4 bale breaker, tandem beaters, lattice-feed openers, and vertical openers. "We took out the No. 4 and tandem beaters," he said, "and put in the old type with six hoppers. We feed from six bales to the hoppers at all times and feel that we get much better blending and cleaning." A much evener yarn results.

J. C. Cudd, superintendent, Wallace Mfg. Co., Jonesville, S. C., stated that he uses about 30 bales a day. Sufficient bales for 16-hours run are put in the opening room at one time and the feeding is from all these simultaneously. He uses four hoppers for the cotton and one for waste from cards and drawing. A. F. Hunt, superintendent, Marion (N. C.) Mfg. Co., said he fed the hoppers from 36 bales continuously and got good results. Reworkable waste is introduced through main feed pipe. Drawing waste goes through a waste machine.

Gaston Gage, instructor, Clemson College, made the statement that waste increases as the grade of cotton is changed from one grade to a lower one. Between middling and

strict low middling the difference is probably between 1.5 and 2% on cards and pickers.

Several members discussed their experiments with long-draft roving frames. Very little difference was noted in breaking strength, evenness of yarn, and ends down; but several members stated that they had more fly, as result of using long drafts.

Mr. Lyons, in discussing the question of tinting spun rayon for identification purposes, said that his method was spray in a fugitive color at the back of the hopper. D. W. Stansell, superintendent Victor-Monaghan plant, Greer, S. C., said they bought most of rayon already tinted; some they tinted on the regular machine in the dye house.

Smith Crow, superintendent Drayton Mills, Spartanburg, S. C., gave his experience in running spun rayon. "I carry it through the pickers, cards, two processes of drawing; then through the roving frames, the number of processes of roving depending, of course, upon the yarn counts," he said. On print cloth only one process of roving—long-draft—is used; 30s yarn and under is run single; finer yarns run double in spinning. Mr. Crow said his breaking strength on 30s yarn ran from 60 to 65. "We are running ours through pickers, cards, and one process of drawing," said C. C. Roberts, superintendent Kendall Mills, Pelser, S. C., "making 4.50 hank roving and running it double in spinning. The breaking strength averages from 60 to 62."

T. Henry Wood, Oconee Mills, Inc., Westminster, S. C., conducted the discussion on spinning. It was brought out that there has been little tendency to run lighter numbers in filling numbers in recent years, although the application of more size to the warp has had some influence in this direction.

The lapping up of cotton on the middle roll with long-draft spinning has given some trouble in a number of plants and various remedies were suggested. B. V. White Jr., Ware Shoals (S. C.) Mfg. Co., described a device developed and patented by one of his spinners which cleared up the trouble. This consists of a special type clearer board on which the cover—the flannel—is glued on the board instead of being put on in the conventional way.

John S. Lockman, Monarch Mills, Lockhart, S. C., and J. Manning Bolt, superintendent, Calhoun Mills, Calhoun Falls, S. C., agreed that 25% of loom stops comes from gouts. "A good deal," said Mr. Lockman, "depends on how you size your stock."

Spindle Lubrication

APPROXIMATELY 150 members registered for the spring meeting of the Eastern Carolina Division of the Southern Textile Association held at State College Textile School, Raleigh, N. C., May 6. J. L. James, superintendent, Erwin Cotton Mills No. 1, West Durham, N. C., and chairman of the section, presided.

Bruce Cotten, of Charlotte, N. C., presented a talking moving picture on the subject of lubrication, then introduced F. H. Trewin, engineer, who discussed various lubrication problems.

"In lubrication," said Mr. Trewin, "we have an individual problem in each mill." In selecting the type of lubricant, it is necessary to consider the speed of the machine and the method of applying the lubricant to the bearings or other parts. The bearing must be floated in an oil film to prevent contact with the metal surfaces, with consequent wear. A type of oil must be selected that will give the proper service. The oil must be of the proper viscosity and stability, so that it does not change while in use. Mr. Trewin went on to state that lubrication influences the power consumption in the mill. The spinning room takes roughly 50% of the total power used. There should be a complete oil film separating the surfaces, in order to have proper spindle lubrication. High stability and resistance to oxidation in the oil is very desirable, so that there will be no deposit in the bases. If there is a deposit in the bases, the power consumption mounts rapidly.

Mr. Trewin stated that, in his opinion, better results in spindle lubrication could be caused by using a heavier oil in the summertime when the temperature is higher, and a lighter oil in the winter. Questioned as to how a mill man could determine which is the best spindle oil for him to use, it was brought out that the best practice would be to use a high-stability spindle oil following the recommendation of the builder of the frame. This oil should be one which has the maximum resistance to oxidation and which has high stability so that it will not develop gum or sludge or these deposits on the bolsters. Generally speaking, for the light gravity spindle—the old type of spindle—a good viscosity would be 60 sec. at 100° F. For the heavier-duty, long-draft spindle 80 sec. viscosity is recommended; and for still heavier spindles use of an oil of 100 sec. viscosity would probably give best results. For the average, an oil which would give a viscosity of 80 sec. at the operating temperature would be satisfactory.

"It is very difficult to run a power test on any spinning frame," said Mr. Trewin, "because we have so many variables and we are dealing in differences of only a fraction of 1%." Power tests of short duration are not dependable; it is difficult to get conclusive results without running over a considerable length of time.

Questioned about the use of kerosene for cutting out deposits at the base of the spindle, Mr. Trewin said that the best method of cleaning bases is to take a suction syringe and suck out the oil. Only in extreme cases is there such a heavy deposit that it cannot be loosened by using a light oil with a brush. In other words, flush and pump your spindle bases. Take out the bolsters. Wash the bolsters in light oil, unless you have a very heavy, gummy deposit, in which case you may have to use a solvent. Take out the spindle and wipe it off; take out the blade, examine it, and wipe it off. Then be sure you get the same assembly of blade and spindle and spindle in bolster. Very rarely the necessity arises, from having a very heavy deposit, that you have to use a solvent. Kerosene is a poor type of solvent. It helps some, but if you use it, be sure the parts are well coated with pure spindle oil before they are put back in there, because kerosene cuts down to the surface of the metal and cuts out this film of spindle oil that is in the pores of the metal.

In discussing ball-bearing lubrication, Mr. Trewin cautioned against the practice of packing the bearings too tight with grease. This, he said, is a common practice and is harmful.

J. B. Batton, of the Rosemary Mfg. Co., Roanoke Rapids, N. C., was elected as chairman for the coming year. W. H. Miley, Jr., of The Erwin Cotton Mills Co., Erwin, N. C., was elected vice-chairman, and Geo. Gilliam, of the Sterling Cotton Mills, Franklinton, N. C., secretary. To serve on the executive committee for the four-year period, H. Grady Lyon, of The Erwin Cotton Mills Co., West Durham, N. C., and for a three-year period, Sidney Green, of the Eno Cotton Mills, Hillsboro, N. C., were elected. Other members of the executive committee are D. E. Long, of Oxford Cotton Mills, Oxford, N. C.; Virgil E. McDowell, Rosemary Mfg. Co., Roanoke Rapids, N. C.; and Geo. E. Moore, J. M. Odell Mfg. Co., Bynum, N. C.

Planning Mill Maintenance

At Eavenson & Levering plant repair work is scheduled to keep machine outages at a minimum

By W. A. LOFFT
Chief Engineer, Eavenson & Levering Co.

IN OUR November, 1938, issue we discussed the organization and functions of the engineering department of a textile plant as based on practice in a number of the larger cotton mills in the South. Herewith we present an article describing how a well-known plant in another branch of the industry has organized the work of its maintenance department in order to keep machine outages at a minimum.

THE NORMAL maintenance force at the plant of Eavenson & Levering Co., Camden, N. J., consists of 50 men. This plant, one of the largest wool scouring and carbonizing establishments in the country, is geared to operate 24 hours a day, 5 days a week. With this schedule of production, maintenance and repair work are directed entirely toward minimizing the outages of machines. To accomplish this satisfactorily, all maintenance work is planned ahead to sandwich in between production runs.

The Eavenson & Levering plant occupies 10 acres of ground and normally employs between 400 and 500 workers. The plant generates all of its own electrical energy except for stand-by purposes. Extracted steam from the turbines is used for process work. Two deep wells provide water for the plant in quantities averaging about 500,000 gal. per day. The water is treated in four 80,000-gal. zeolite softeners.

To maintain this rather extensive mill properly, as well as to operate the power plant and water system, with a force of 50 men, it is important that work be scheduled and necessary repairs be planned ahead of time whenever possible. This phase of the maintenance work is directed very satisfactorily by a planning division of the service organization. The planning department consists of the machine shop foremen and two clerks in the stock room. One clerk devotes practically all of his time to laying out schedules to cover routine maintenance and necessary repairs. The other clerk divides his time between this work and tending the stock room. Organization of the maintenance department is shown in Fig. 1.

Routine maintenance schedules for all machines and building equipment are listed in master books after the lubrication, cleaning, and adjustment requirements of each piece of equipment have been studied. For instance,

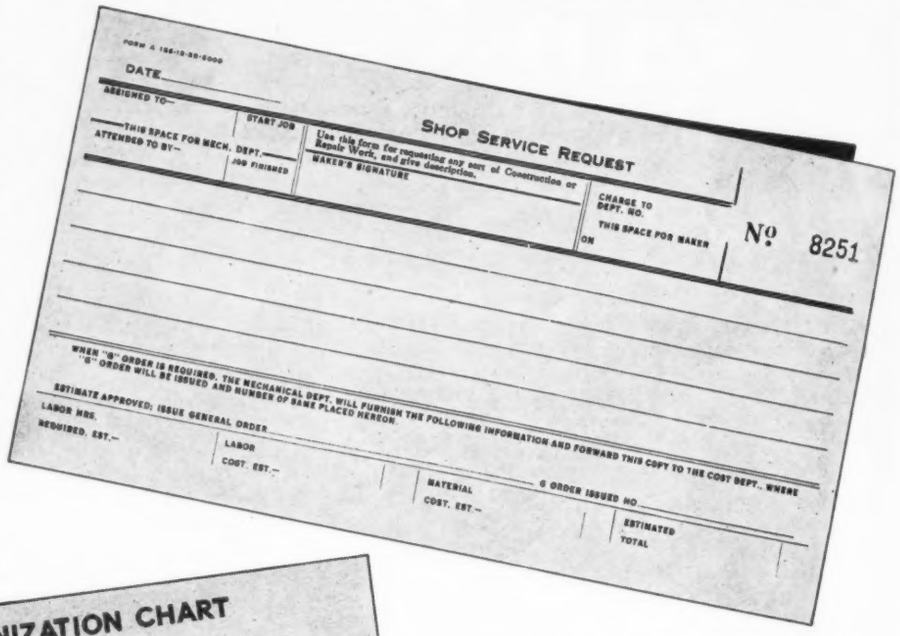

DATE
SHOP SERVICE REQUEST
Use this form for requesting any sort of Construction or Repair Work, and give description.
No. 8251
THIS SPACE FOR MECH. DEPT.
ATTENDED TO BY—
START JOB
JOB FINISHED
MAKER'S SIGNATURE
CHARGE TO DEPT. NO.
THIS SPACE FOR MAKER ON
WHEN "G" ORDER IS REQUIRED, THE MECHANICAL DEPT. WILL FURNISH THE FOLLOWING INFORMATION AND FORWARD THIS COPY TO THE COST DEPT., WHERE "G" ORDER WILL BE ISSUED AND NUMBER OF SAME PLACED HEREON.
ESTIMATE APPROVED; ISSUE GENERAL ORDER
LABOR HRS. REQUIRED, EST.—
LABOR COST, EST.—
MATERIAL COST, EST.—
G ORDER ISSUED NO.
ESTIMATED TOTAL

Fig. 2. Form used by production department foremen for requesting service from mechanical department

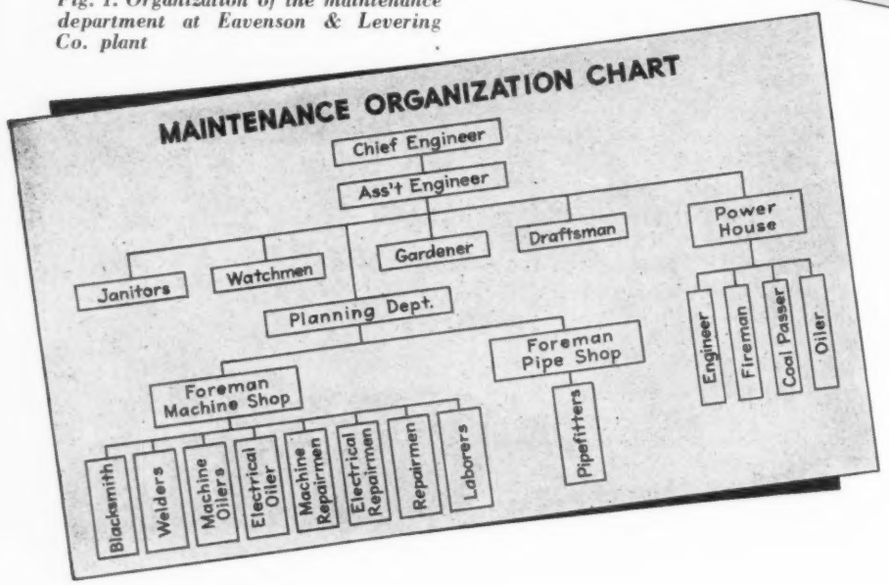


Fig. 1. Organization of the maintenance department at Eavenson & Levering Co. plant

the lubrication requirements of a typical dryer are listed as follows:

No. 5 Dryer—Wire apron rolls—Every 6 months.

No. 5 Dryer—Wire apron bearings—Every week.

No. 5 Dryer—Feed bearings—Every 3 months.

No. 5 Dryer—Bottom apron drive—Every week.

No. 5 Dryer—Variable-speed reducer—Every month.

No. 5 Dryer—Worm-gear reducer—Every year.

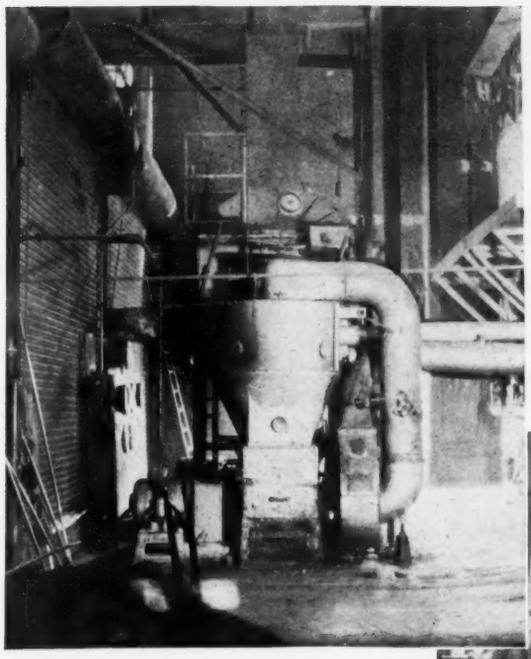
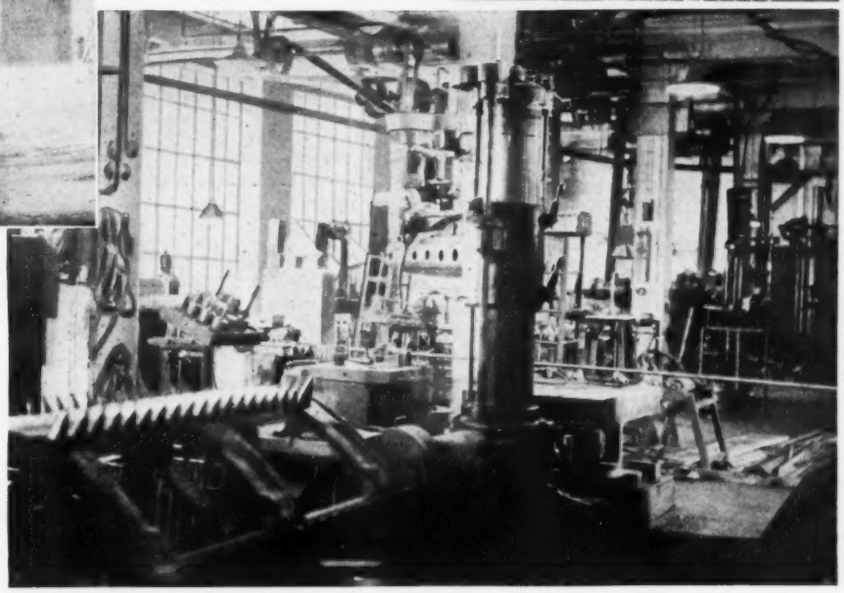


Fig. 3. Well-equipped machine shop is capable of handling practically any repair work necessary in the mill (bottom)

Fig. 4. New conduit and other electrical equipment is installed by maintenance men in their "planned" spare time (right)

Fig. 5. New coal-handling equipment installed by maintenance department will pay for itself in less than three years through fuel savings alone (left)



These master lists form the basis of the planning department's daily schedules. Daily lubrication requirements for all mechanical equipment are given to two oilers. An additional man handles the lubrication and servicing of all the electrical equipment. This consists of over 600 motors, varying from 1 to 20 h.p., together with the necessary switches and controls. In addition to oiling motor bearings, this man cleans motors and dresses switchgear and controllers according to schedule. Since one man has been made responsible for all electrical driving equipment, there has been no neglect through oversight —one man thinking that another has tended to it—and machine outages due to electrical-drive failure are practically unknown.

Minor Repairs

Planning minor repairs, adjustments, and parts replacements on production machinery is a little more involved, and demands the close cooperation of the production foremen. The procedure is for the foremen to notify the planning department when necessary adjustments, repairs, or replacements are anticipated, in order that work can be so scheduled as not to interfere with machine operation. For instance, the rubber rolls on the scouring machines must be periodically replaced by reconditioned units. As this naturally requires that the machine must be shut down, it is up to the production foreman to notify the maintenance department in sufficient time to permit these replacements being made when the washer is not in use. Service requests of this nature are sent to the planning department on Shop Service Request forms (Fig. 2) which enumerate the number of the machine and the nature of the work to be done. With these written requests on hand in adequate time, it is relatively simple for the planning department to lay out this work so as not to interfere with production. Emergency breakdowns and repairs are telephoned direct to the planning department for immediate action.

Besides planning all mill service work, the planning department lays out machine shop and new installation work to assure that every maintenance man is properly utilized. The plant has a completely equipped machine shop (Fig. 3) that is capable of handling practically any repair work necessary in the mill. In addition to handling mill repairs and reconditioning worn parts, the machine shop makes stainless-steel, chemical-resisting pumps, conveyor aprons, bushings, keyway shafts, carrier cranks, and other pieces of special equipment used in the mill.

Also there is a completely equipped welding room; a pipe shop provided with a 2-in. and an 8-in. pipe machine; and a carpenter shop, which even turns out suitable patterns to be sent to outside foundries for castings.

Studies and improvements are continuously being made by the maintenance department toward more reliable and efficient plant operation. New electrical conduit, feeders, and transformers have been recently installd to cut down power losses, give better voltage regulation and improve the reliability of the service (Fig. 4). Static condensers have been set up in strategic places to correct the poor power factor occasioned by the numerous induction motors operating in the mill. A 100-kw. reduction turbine was installed to replace reducing valves that formerly supplied a small quantity of 100-lb. process steam from the 200-lb. main. By means of a reducing gear, an old generator was utilized with this turbine to provide additional electrical energy. Other improvements in plant operation made by the maintenance department include revamping the boilers and installing pulverizers, and putting in coal-handling and weighing equipment (Fig. 5) which will pay for itself in less than three years by the fuel savings alone.

Scientific Styling

Can become a reality if fabric men comprehend and apply basic laws

By ADOLPH KLEIN
Klein Bros. Fabrics Corp.

A SCIENTIFIC approach is becoming more and more necessary to practical styling. I might say, also, to successful and profitable styling because, unfortunately, the success of styling efforts is not measured entirely in the esthetic satisfaction which comes from creation of something beautiful, or in the joyous satisfaction of a job well done. There must be included the practical satisfaction of styling a line that sells profitably.

For many years I have tried to help solve my own styling problems by a scientific approach, and as a result of those years of experience have drawn certain definite conclusions. Of course, it must be recognized that styling is by no means a pure scientific or mathematical venture, in which every factor or element can be calculated to a fine degree of accuracy, and the various parts put together in the manner which years of experience have proved will produce a certain definite and positive result. The important thing to remember is that the laws of styling are not universal but must be applied to the specific problems of each organization depending upon the type of business, the character and personality of the organization, and the size and volume of the company.

Is it an organization catering to the street-wear or sportswear trades? Is it a plain goods or a print organization, or both? Is it an organization that shows early, or somewhat later, or very late? These are some of the questions which must be answered before the basic laws of styling can be intelligently applied.

What are some of these elementary and basic laws?

1. There are four seasons for styling, just as there are four seasons to each year. Basic seasonal needs never change. Fall requires the same kinds of fabrics, year in year out. Winter has its requirements; spring, its; etc. Early fall calls for dressy weaves; late fall and winter for plainer weaves; spring means lighter fabrics and prints; summer requires summery things, in the usual meaning of the word.

2. The surface quality and the textural quality (hand and drape) of every fabric must be adapted to the silhouette-use to which it is to be put; i.e., whether the garment is to have soft lines, tailored lines, straight lines, or whatever type of silhouette may be in vogue. The feel of the fabric on the body when worn must also be right.

3. The price at which the fabric is built to sell must take into consideration the yardage requirements of the season—smaller yardage is usually used in fall and early winter seasons, larger yardage in spring and summer. There is also a definite relationship between economic conditions and styling. When fabric prices are high, styles which require small yardage per garment are frequently in vogue. In depression times, when business is hard to get, more novelties are produced than in good times, when plainer fabrics produce a suitable volume of business. But stylists should remember that novelty cloths can be too novel for their own good, and be governed accordingly.

Correct styling is of major importance in women's wear fabrics and garments. Photo shows printed silk taffeta dress by Jeanne Tete snapped at opening of the racing season at Belmont Park recently.

4. Sample pieces should be ready many months in advance of actual fabric need so that there will be ample opportunity to get some customer reaction, solve any unusual weaving problems which a particular construction may present, and overcome any finishing problems which may be encountered. It is also important to allow sufficient time to have sample garments made, and to check for unusual shrinkage or stretching propensities, hang, drape, etc.

Any fabric that successfully meets all of the above qualifications can not only be successfully and profitably styled, but successfully and profitably sold as well.

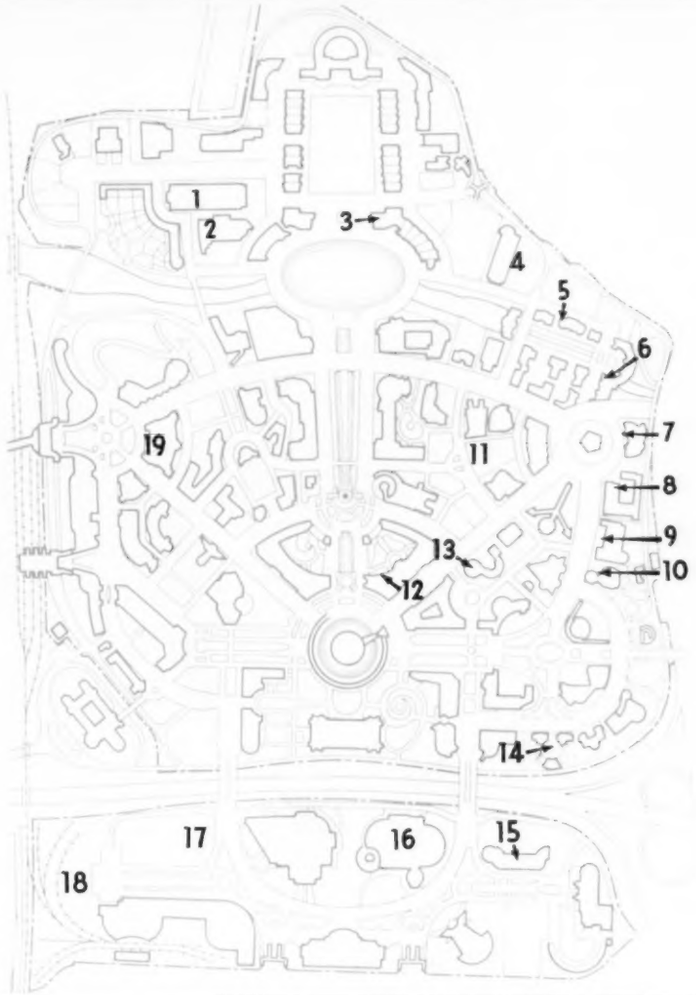
There are, however, several additional factors which exert an influence and which must therefore be accorded attention.

5. Paris fashion trends exert positive but slow-acting force on styling. Such trends should be watched slavishly, but always they should be interpreted in terms of domestic needs.

6. Mills and/or converters must make seasonal commitments based upon sampling of cuts. Such sampling very often is not truly indicative of the actual popularity a fabric will achieve, because there are such variables as the quality of the garments made from the cuts, the ability of the cutter properly to merchandise the fabric and garment, etc. A better way of handling this is for the stylist to have a few good garments made up from his cloths, and himself show these to several cutters of the type it is desired to interest in the fabrics.

7. Naturally, every number a stylist produces will not be 100% successful. In this connection stylists should also be merchandisers, and learn to clean mistakes out quickly, as the longer they are kept on hand the greater the loss will be. Stylists should be introspective and retrospective, analyzing their mistakes and correcting them whenever possible. Mistakes will be made every season; the successful stylist is the one who learns something from each error.

Abstract of a speech made before the American Association of Textile Technologists.



GUIDE TO THE TEXTILE EXHIBITS DESCRIBED IN THIS SECTION

Nylon (Du Pont Building)	10
Soy Bean Fiber (Ford Building)	16
Fiberglas (Owens-Illinois exhibit)	13
Lanital (Italian Building)	1
Lastex (U. S. Rubber Co. in Consumers' Bldg.)	12
Controlastic (Firestone Building)	15
Tennessee-Eastman Rayon (Eastman Building)	7
Tennessee-Eastman Rayon (in Hafner Associates exhibit in Consumers' Building)	12
Acele (Du Pont Building)	10
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Cotton Carding (Ford Building)	16
Shelton Looms (Ford Building)	16
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North Carolina (Court of States)	6
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Swedish Handicraft Textiles (Swedish Building)	11
Silk Reeling (Japanese Pavilion)	4

OTHER TEXTILE EXHIBITS

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Group of Corduroy Manufacturers (Man Building)	8
Stehli & Co. (Man Building)	8
Princeton, Cyril Johnson, Strong Hewat and Kingsley (in Roger Kent exhibit, Man Building)	8
Cheney Bros. (Man Building)	8
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Other Foreign Countries (Around Lagoon of Nations) —near	1, 2, 3 & 4

Textiles of Tomorrow

PREVIEWED AT THE WORLD OF TOMORROW

"Why a New York World's Fair Section in TEXTILE WORLD when there isn't a Textile Building at the Fair?" one of our friends asked us. "That's why," we replied.

If textile exhibits were concentrated in one building, labeled as such, the textile visitor would not need a guide. But since the features of particular interest to him are scattered throughout the vast acreage of the Fair, he is in urgent need of such a guide. That is just what this section is. It was prepared for the purpose of letting our readers know just what textile features are there, and just where they are. If any reader is thus enabled to put his trip to the New York World's Fair on his expense account, we shall feel a little guilty, but at the same time glad to have been of this additional service.

All photographs, except those otherwise credited, were taken by our staff photographer.

Incidentally, some of the textile exhibits were incomplete at the time the pictures were taken, which accounts for their omission from this photographic record. Also, we may have missed some others. We shall be glad to hear of any such cases, and to complete the record in subsequent issues.—EDITOR.

■ CHANGE is the keynote at the New York World's Fair. Whether for the good or the bad, whether planned or accidental, changes are under way in practically all fields of human endeavor portrayed at the fair. From those changes is being built the World of Tomorrow.

We doubt if in any field, change has been more abrupt than in textiles. It may not be so apparent to the lay visitor, because the textile exhibits are scattered, and also because most of the changes are of a fundamental rather than a surface type.

But suppose a textile manufacturer who, let us say, did a Rip Van Winkle at the Columbian Exposition in 1893, should suddenly wake up and find himself at the 1939 Fair. He would find that his industry, which for centuries had depended upon four major natural fibers, had reached a point where a very large part of its raw material was synthetic.

But we don't have to go back to 1893. Let's take 1933, the first year of the Century of Progress Exposition at Chicago—and let us put a textile manufacturer to sleep at that fair also. If he came to at the New York fair, he

would find that all the well-established ideas of cotton and wood-pulp as the bases for synthetic fibers had been menaced in those few years.

He would find a fiber made of a synthesis of air, water and coal; a fiber made from soy beans; a fiber made from casein, the principal ingredient of cheese; a new-comer called Fiberglas.

That to us is the thrilling phase of this story. In fact, we hope that if we do fall asleep at this Fair we shall surely come to life in time to visit the next exposition and see the outcome of all this textile turmoil.

The displays shown on the following pages are scattered through the buildings of some of the large industries, through the Man Building and the Consumers' Building, through the buildings in the International area, and in the State buildings. In fact there's even one textile exhibit in the Amusement Area, but at this writing we are not sure we shall be able to get a picture of it in time for this issue.

An Invitation

TO OUR READERS: When you come to the New York World's Fair, drop in and see us on the 29th floor of the McGraw Hill Building, 330 West 42nd Street. We'll be glad to help you in any way we can. In fact, if it's a pretty day when you call, we may even play hookey and go out to the Fair with you.—*Editor.*

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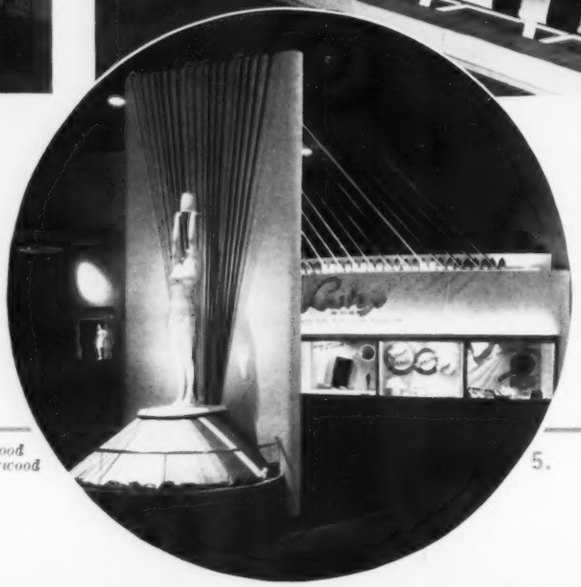

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1. A model at Du Pont exhibit demonstrates the elasticity of her Nylon hosiery to one of the Du Pont attendants

2. A laboratory set-up for producing continuous-filament yarn from a soy-bean compound was shown in the Ford exhibit

3. Fiberglass exhibit in the Glass Building drew crowds who watched this continuous filament material handled on a Saco-Lowell twister, wound on a Universal winder, and woven on two Fletcher narrow fabric looms

4. Lanital samples of both fiber and fabrics played a prominent part in the Snia-Viscosa exhibit in the Italian Building

5. United States Rubber Co. offers a dramatic display of Lastex in the Consumers Building

Underwood & Underwood

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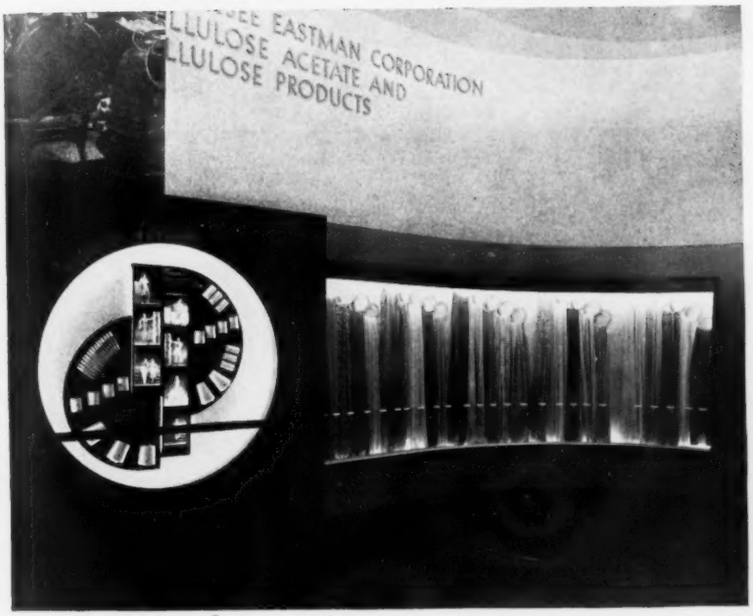

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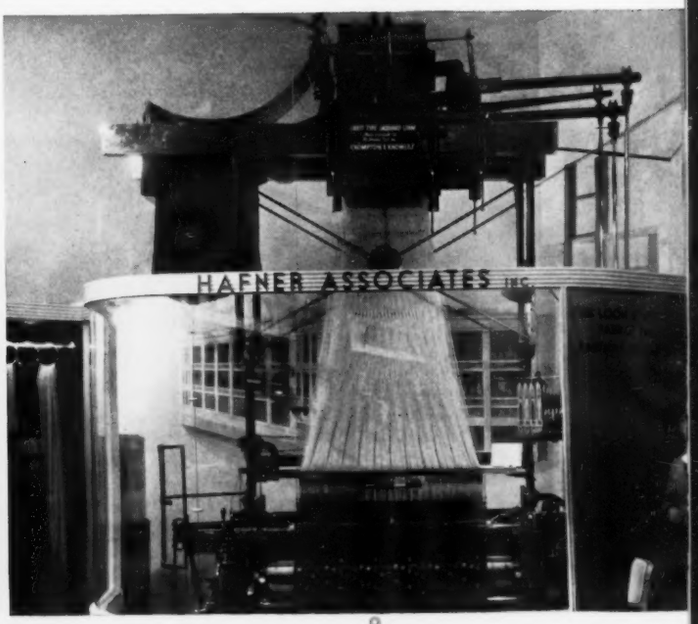

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6. Firestone Tire & Rubber Co. displays Controlastic and stresses its use in bathing suits

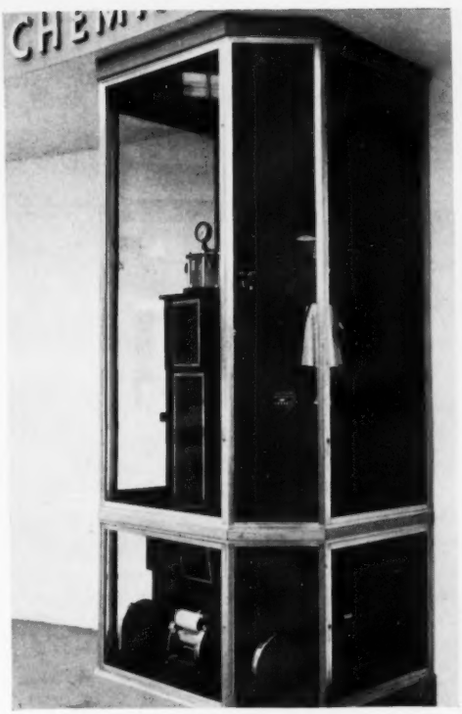
7. Budd Corp., manufacturer of continuous-process, cuprammonium rayon-producing machinery for the New Process Rayon Co., is demonstrating the operation of this system

8. Tennessee-Eastman Corp. shows yarns and fabrics in the Eastman Kodak Building. The group is enhanced by color transparencies showing garments

9. Hafner Associates, exhibiting in Consumers Building, have a Crompton & Knowles jacquard loom in operation weaving a fabric of Eastman acetate

10. Du Pont displays a compact set-up demonstrating manufacture of Acele conveniently magnified for observation

11. Viscose rayon production of Du Pont is dramatized at the fair in the operation of a Crompton & Knowles jacquard loom weaving this material



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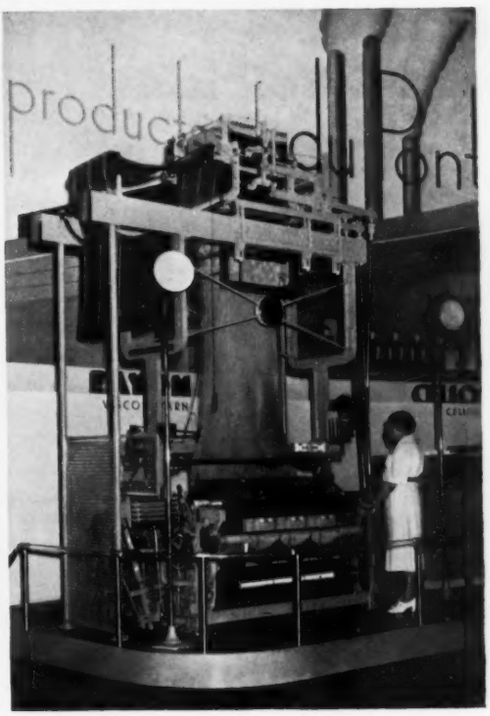

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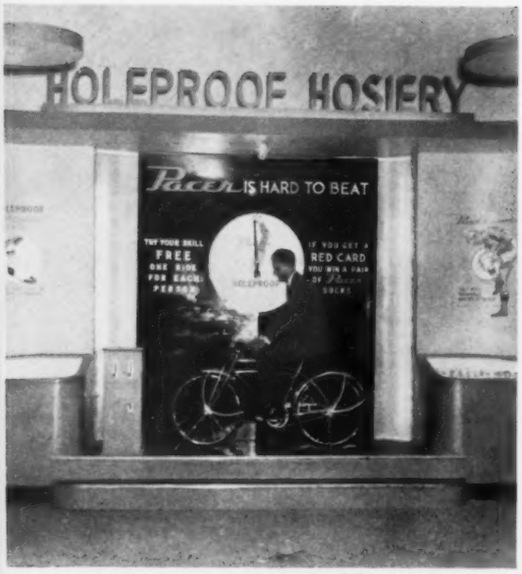

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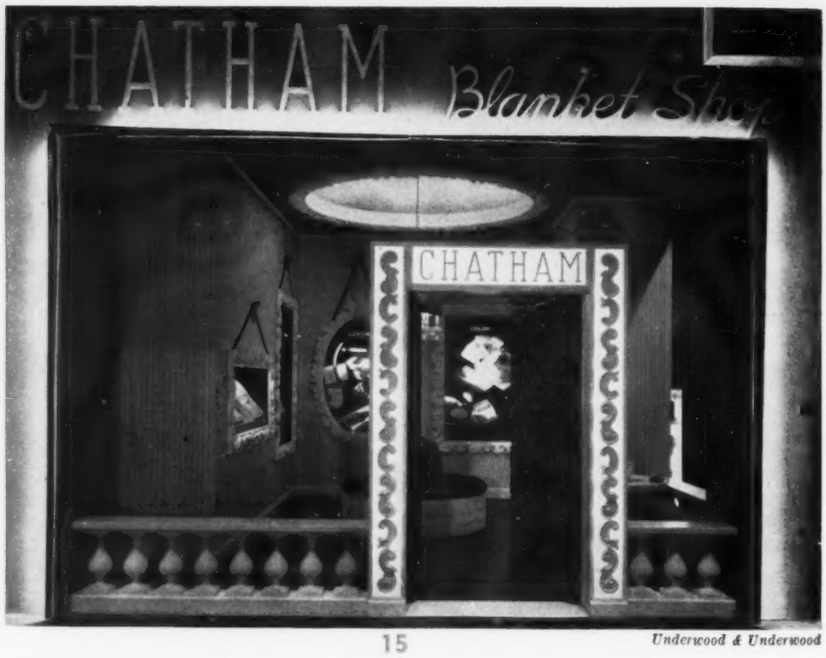

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Underwood & Underwood

AN innovation in sculptural technique is the modern depiction of "textiles" at the New York World's Fair 1939, executed in structural steel by Robert Foster, and reproduced on the front cover of this issue. The artist utilized the spaces — that is, air-enclosed by the steel plates —as well as the solid masses of the steel itself, to achieve the ultimate effect. Photograph is by Underwood & Underwood.

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12. Holeproof Hosiery Co.'s exhibit features a bicycle to dramatize its "Pacer" brand of half-hose. Successful riders are given cards which may be exchanged for stockings

13. This is one of the murals on the north side of the Man Building. It was designed by Fernado Texidor and depicts the production of textile raw materials, including silk raising, sheep shearing, cotton growing and flax pulling

14. Cooper's, Inc., stresses its Jockey underwardrobe at its exhibit

15. The Chatham Blanket Shop is a feature of the Consumers Building. The exhibits are attractively framed and appear as pictures hanging on the wall. Comfort, luxury and color are stressed

16. The exhibit of Alpagora announces that the fabric is made by Gloversville Knitting Co.

17. Wm. Skinner & Sons exhibit their various contributions to men's apparel

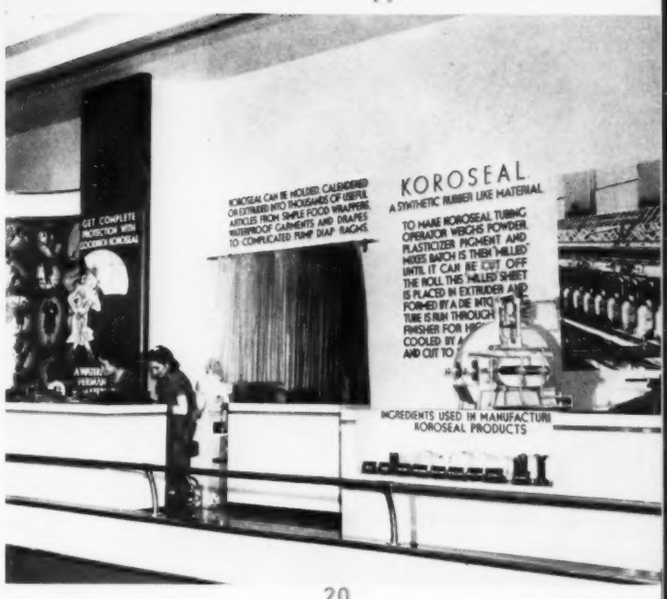
18. Goodall Worsted Co. presents its Palm Beach suits in three revolving groups stressing (from left to right) the use of its special fabrics for business wear, formal wear and sport

19. Interwoven Stocking Co. displays its products in a portion of Man Building decorated to resemble the old Guild Hall in Leicester, England, the birthplace of the knitting industry

20. Goodrich Rubber Mfg. Co. shows various forms and manufacturing processes involving its synthetic rubber-like product, Koroseal

21. In dramatizing its dyes, Du Pont exhibits a fastness-to-light tester and a laboratory laundering machine for washability tests. To the right of these is shown its repellent finish, Zelan

22. Bakelite Corp. shows Revolite, illustrating the manufacturing process



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From "Songs of the World's Fair and Other Poems" by John Black, copyright 1939, Bruce Humphries, Inc., Boston, Mass. Mr. Black was formerly assistant editor of TEXTILE WORLD.

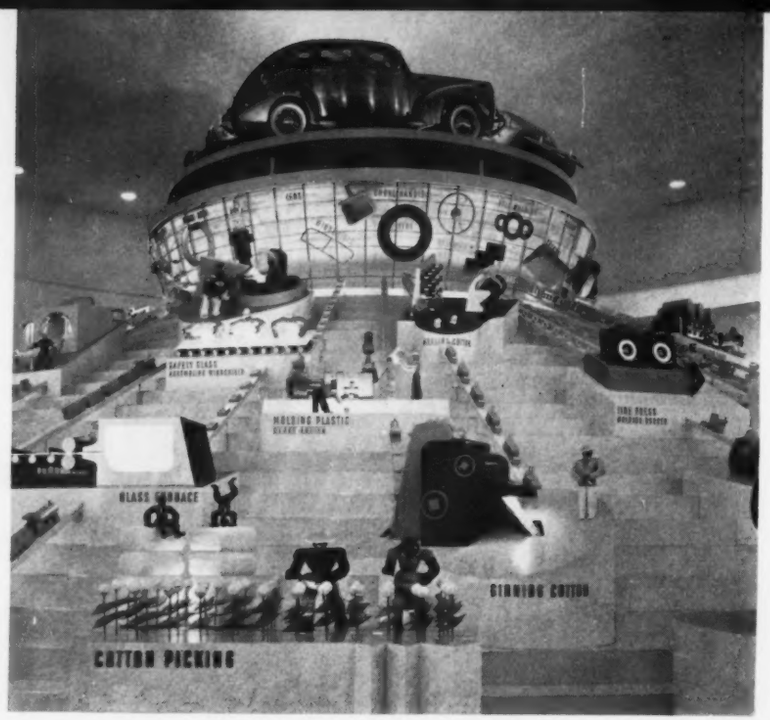
MAN IS RAYON

You ask me, what is Man?

I answer: Man
Is rayon,
Man is a chemistry that convolves
Trees into textiles.

Man is a something beyond the worm that makes the silk, beyond the sheep that gives the wool,
Man is beyond the earth itself—the earth!—magnificent though it be,

The earth that yields flax . . . cotton . . .
Man! Beyond the sun that feeds the mulberry leaves that feed the silk-worm;
Man! The ultimate animal who has just begun
His eternity of change.



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Ford Photo

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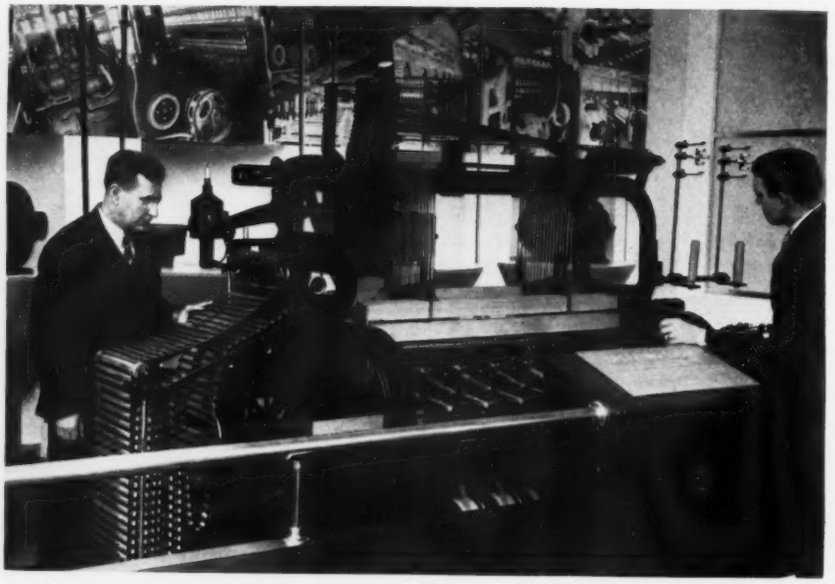

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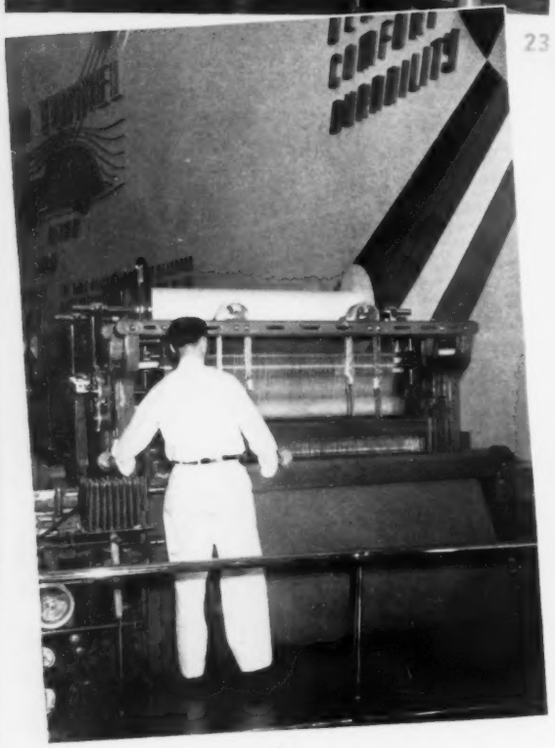

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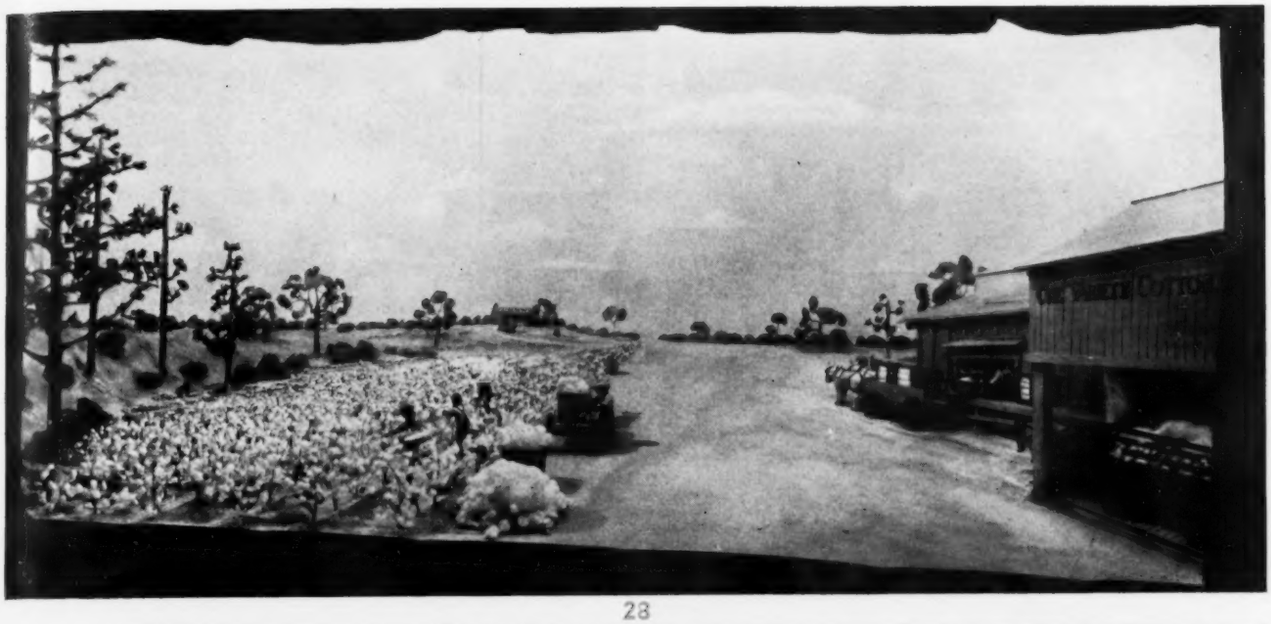

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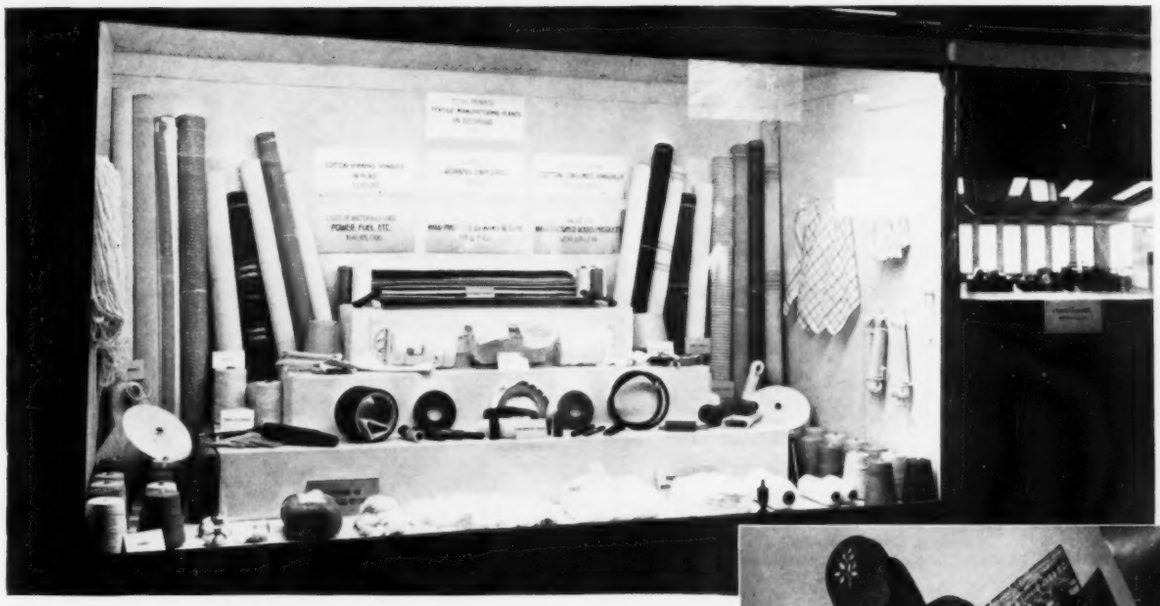

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23. Ford uses a variety of braiders in covering wire for its electrical system. From left to right in the row pictured above are to be seen Wardell and Reading braiders

24. Also in the Ford exhibit, Shelton Looms have set up a Crompton & Knowles upholstery loom turning out the mohair pile-fabric used in the cars

25. Ford dramatizes the course of raw materials from the earth to the motor car in a large revolving display with animated figures. The portion showing cotton is illustrated above

26. Westinghouse exhibits a Crompton & Knowles narrow-fabric jacquard loom operated by a Westinghouse motor. In the background are other Westinghouse products designed for the textile industry

27. As a portion of Ford's textile exhibit is a Whitin card running on cotton

28. In the Georgia State exhibit, one attractive diorama shows a cotton field with adjacent gin basking in the sunlight of a hot summer afternoon (Diorama which is about four feet wide, is based on photographs taken by Miss Bessie Callaway of LaGrange, Ga.)

29. In the Georgia State exhibit is a display window of the many diverse products made by Callaway Mills

30. Around the walls of the North Carolina State exhibit are abstract figures depicting important industries. Above is the figure "Textiles", holding the picture of a weave room in its hands

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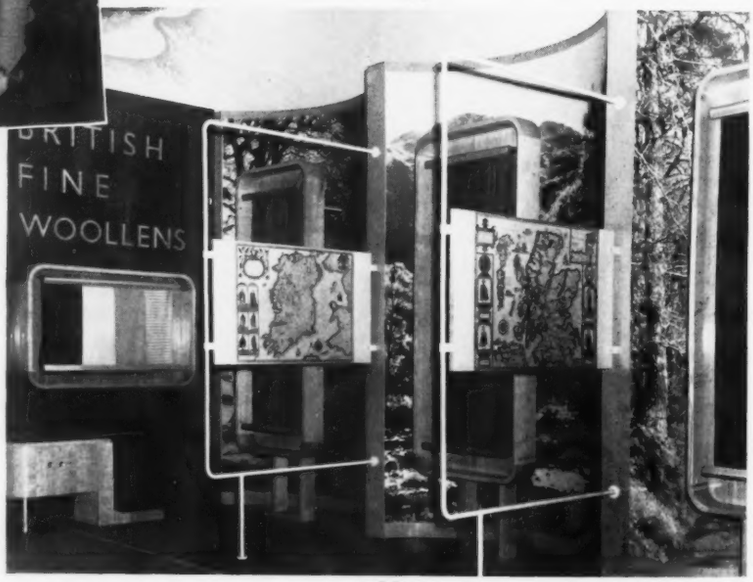

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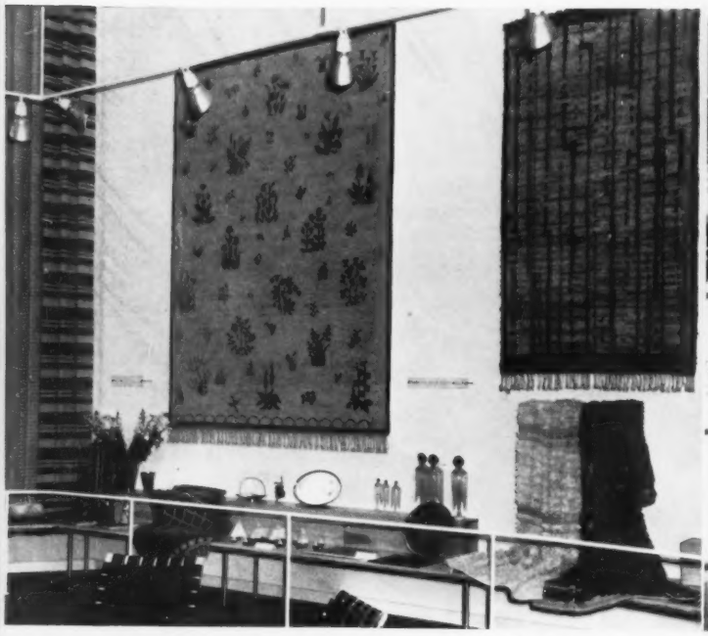
31. Japanese girls reeling raw silk are centers of attention in the Japanese Building. They are reeling 13/15 denier, XXX grade

32. Irish linen is a feature of the British exhibit. Giant bobbins contain miniature views of flax manufacture and the familiar flax wheel of our ancestors is shown in the background

33. "Fine British Woolens" says the sign, and the fabrics are shown in adjacent niches. This is in the British Building

34. In the Swedish Building, handicraft production of textiles is an important part of the industrial arts display

35. In the Australian section of the British Building are shown samples of wool from that continent together with pictures dramatizing sheep raising and shearing



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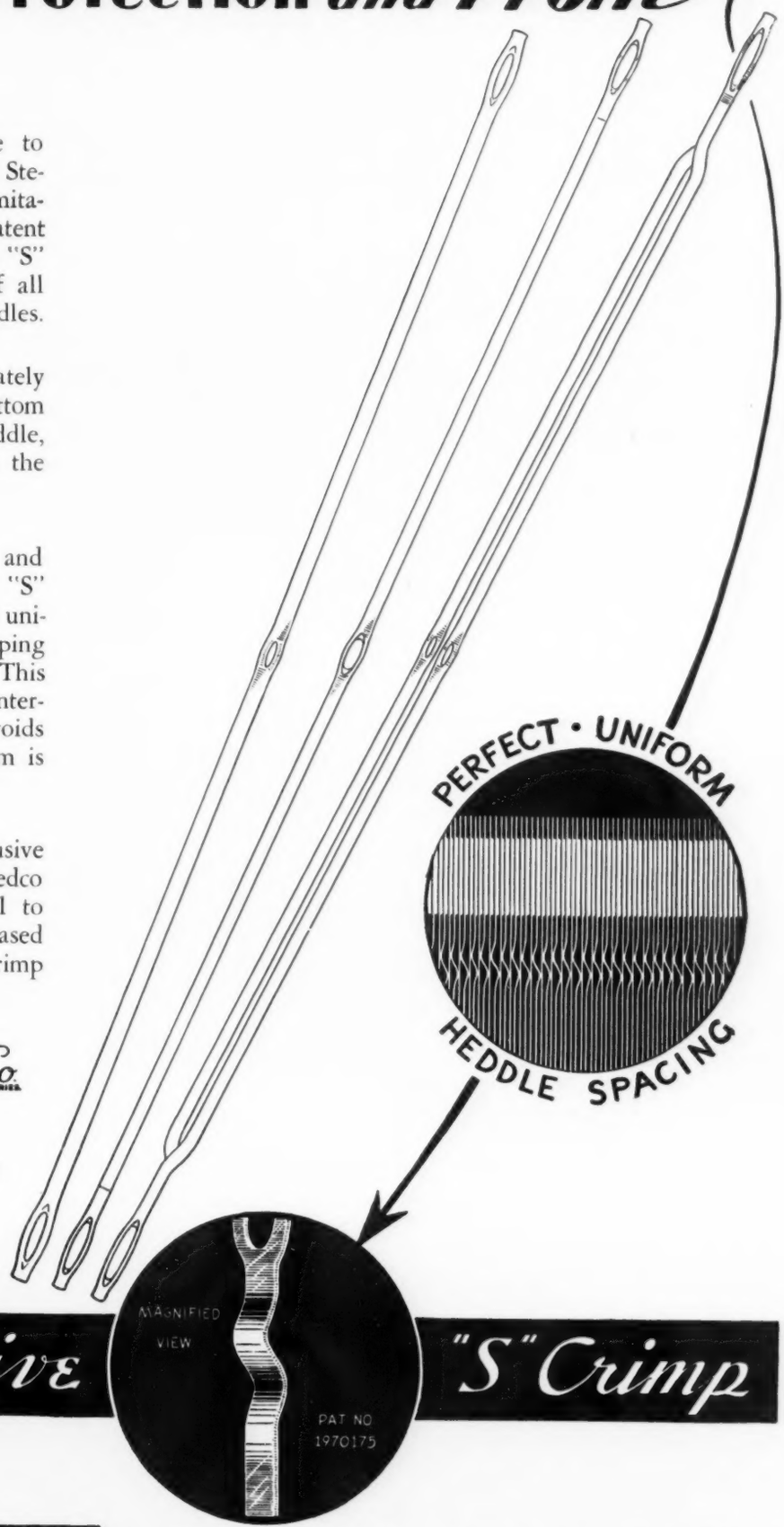
For Your Protection *and Profit*

In order that you may be able to readily distinguish the original Stehedco Flat Steel Heddle from imitations, there is registered in the patent office (Patent No. 1970175) the "S" crimp which is the construction of all genuine Stehedco Flat Steel Heddles.

This "S" crimp is located alternately below the top and above the bottom heddle rod slot on the straight heddle, and below the top slot only on the Duplex type heddle.

In addition to being an excellent and EXCLUSIVE identification, this "S" crimp also serves as a perfect and uniform spacer for the heddles, keeping them the proper distance apart. This facilitates quick handling in the entering process and foremost of all avoids a great deal of friction while loom is in operation.

Therefore, to obtain all the exclusive features possessed by genuine Stehedco Flat Steel Heddles, it is essential to *specify* and see that those purchased and *delivered* have this exclusive crimp as shown below.



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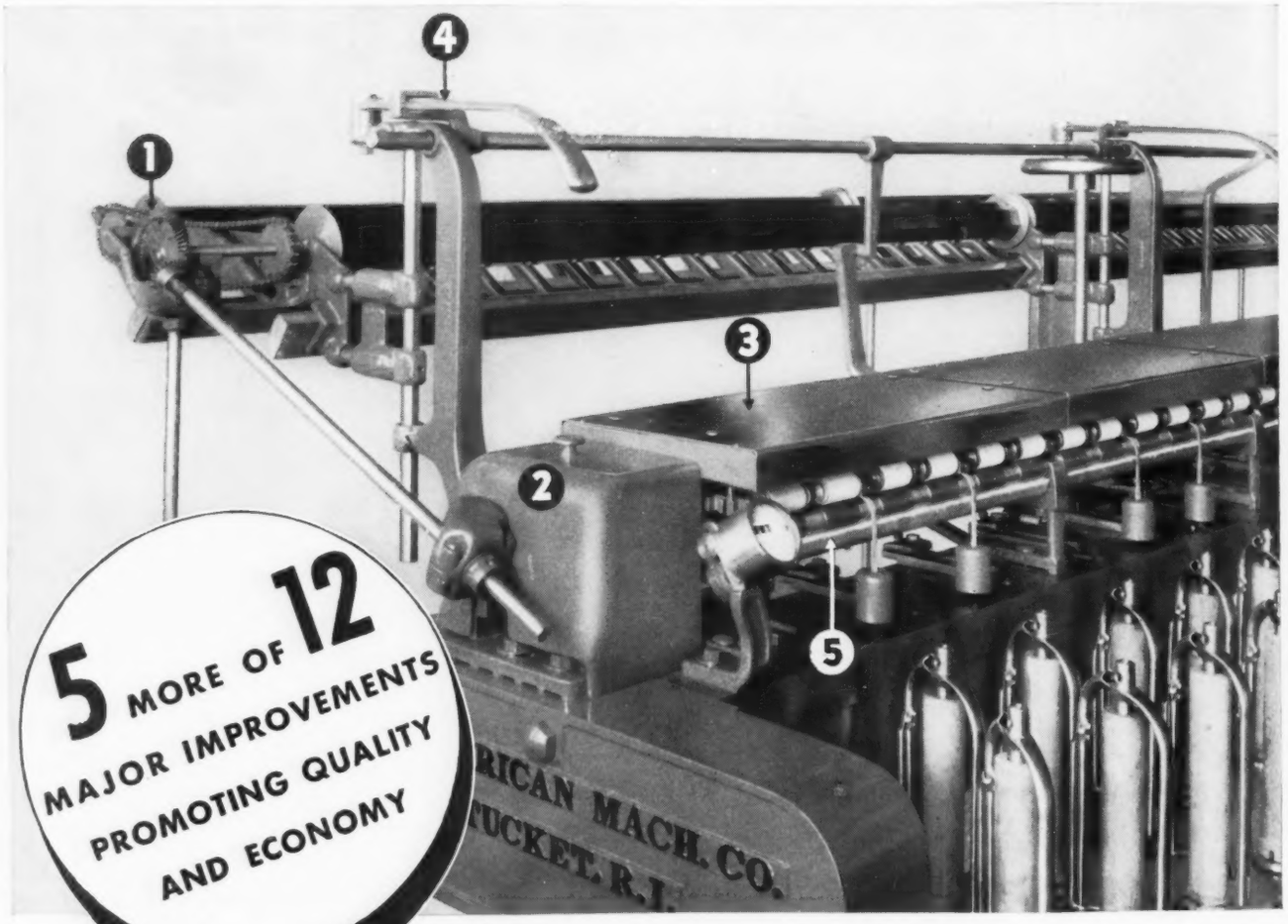
THE NEW H&B
HIGH-DRAFT ROVING FRAME

for ONE or TWO Process Roving, drafting drawing frame sliver up to 35 to produce up to 6 hank roving in one operation. To produce finer roving, this machine's product goes to conventional 3 roll jacks or fly frames.



5 MORE OF 12 MAJOR IMPROVEMENTS PROMOTING QUALITY AND ECONOMY

Illustrated herewith are 5 more major improvements which make the H & B High-Draft Roving Frame an even more profitable investment than before:—**1.** Adjustable bevel gear back lifting roll drive, with cover removed, giving greater stability and smoother operation. **2.** Worm drive adjustable traverse motion. protected by cover, which eliminates dwell. **3.** Rustless metal clearer covers with cylindrical front roll clearer. **4.** New type horse head and belt shipper, giving more rugged construction and more positive operation. **5.** Slotted type underclearer which prevents waste from getting into work and reduces frequency of cleaning. . . Altogether there are 12 major improvements which you should know about. Write without delay for further details regarding this completely redesigned machine.

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Textile Mill Machinery
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THE OVERSEERS' CORNER

KINFOLKS AND ANGELS

A Pete & Bill Discussion

A WICKED gleam lighted up Bill's eye as Pete approached. "What's all this hullabaloo about your friend, the mayor, firing good help to make places for his family, Pete?" He grinned triumphantly.

"Oh, I heard about that," answered Pete, coming to the defense of his newly-elected candidate. "There's nothin' to it. You can't blame a fellow for getting rid of a dead head when he's got a big job to do."

"Yes, but giving those same jobs to his kinfolks—"

"Now wait a minute," Pete interrupted, "don't believe all you hear. I know his nephew that he put in as head of one department and he's a good guy and just the man for the job. 'Course he could have appointed somebody else and got out from under a lot of criticism, but I think more of Mayor Wonda for going ahead and putting in the right man."

"Never did believe in workin' my kinfolks," Bill insisted. "It's bad practice."

"Of course, Bill, you're not supposed to hire a man unless he's got what it takes, and I don't believe in firing one unless he falls down on the job. If you put your company's interest first and demand 100% service from every man under you, I don't believe it makes any difference at all about one of 'em being kin to you."

"That's all right in theory, Pete" agreed Bill, "and it'll work too when all the bosses have wings, but just show me one now that doesn't look after his family interest with one eye, while he watches the company's with the other."

Should overseers employ relatives?

Letters From Readers

Comments on "Do Such Conditions Exist?"

(Refers to letter published February 1939 in Overseers' Corner)

Editor, Overseers' Corner:

While reading through the Overseers' Corner in the February issue, I came across an unusual letter entitled "Do Such Conditions Exist?"

I agree with you, Mr. Editor, when you say: "We know that no such conditions exist in the vast majority of textile mills. But if it is true in even one mill, the whole industry may suffer as a result." Nevertheless, I am sorry to say that according to my observations, I must admit that there is a measure of truth in this operative's letter.

Of the many causes of the textile industry's plight, a certain amount can be attributed to incompetent overseers and son-in-law executives. I know of textile mill executives who are penny-wise and pound-foolish, who employ overseers and second-hands that are not qualified either by training or nature because they can get them to work for less than a more capable man. It is true that some officials of textile mills, both major and minor, are holding their jobs through family and social connections. And, occasionally, in plants that have poor systems of keeping track of inventories, material in process is destroyed to avoid some one's blunder being discovered. As to "passing the buck," that is practiced more or less in any industry.

The author says, "Seven out of ten bosses are supplied with edibles for their tables by donors who can make bad work and not have a word said about it." I wouldn't say it was that proportion, but I do know a few bosses who accept bribes and patronage from undesirable employees. During the worst of the depression, when management was culling its help, such employees considered themselves lucky if they had something on their boss to hold over his head as a club in case he was inclined to give them the pink slip.

Although textile mills in which such conditions exist are surely the exception and not the rule, it will be found that these mills are invariably the chiselers who make life harder for the reputable mills.

This letter isn't meant for propaganda, nor to vent my spleen; but is offered as constructive criticism.

J. W. H.
North Carolina.

Self Improvement During Lay-Off Periods

Editor, Overseers' Corner:

Today, although economic conditions are definitely much better than following the stock market crash of 1929, we still have shut-downs and layoffs in scattered sections and communities. And when a man is layed off, there is of course a period of time while he's looking around for another job or waiting for his mill to resume operations when he has a lot of idle time on his hands.

How can a man who is temporarily out of work spend his time until he is again employed? In this writer's opinion, the very best thing an unemployed person can do is learn more about his particular type of work through study. Many men, when out of work, do little or nothing other than kill time their favorite way when not actually seeking another job. And that is where they make a big mistake. No one can ever know too much about his job. And if and when a man is layed off or is out of work for some other reason, the very best thing he could do is study in an effort to acquire the ability to run his job better than ever before, when he is again working.

Now the question, "How can a man learn more about his job when he isn't even on it?", arises. Answering that question, the thorough study of any of a number of excellent books

CONTRIBUTIONS to the letters and practical helps in "The Overseers' Corner" are paid for when published without regard to length. We use letters (not over 200 words) discussing the material on this page or any other pertinent matter whether of mechanical, managerial or just plain human interest. Those who contribute practical helps or kinks which are published (not over 500 words) will be paid additional for an appropriate sketch to illustrate their device. It is not necessary to submit finished drawings. Contributions of greater than specified length may be given consideration as articles. If these pages interest you —contribute something to them to interest others. Address Editor, Overseers' Corner, Textile World, 330 West 42d St., New York.

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written for the textile superintendent, overseer and other executives—foremen, section hands—is undoubtedly the best way for a man, employed or not, to gain almost unlimited knowledge of his particular job or position. For today, as never before, the publishers of technical books are making available at minimum cost literature which will definitely help the superintendent, overseer or just plain section hand to improve himself. In fact, the time has come when the study of appropriate works of a technical nature is almost essential if one is to retain his position. The good old days (?) when a man learned to run a job only by actual contact experience with the machinery, etc., are all but gone.

—Earl Farmer
(Lincolnton, N. C.)

Help for the Intoxicated Worker

(Refers to "The Intoxicated Worker," Pete & Bill, May, 1939)

Apply psychology upon a person and nine times out of ten the desired result will be obtained. Such is the practice which an overseer must take in order to minimize intoxication among employees. The overseer should cite illustrations of the habitual drunkard and how it did or might affect his family; how it might lead to family arguments or severance of friendships; what effect it might have upon his fellow employees; how it might disrupt the organization he works for and incur the risk of losing his job, etc. By this procedure alone can the employee realize the seriousness of the matter.

The man with family responsibility will then imagine himself in the boots of the habitual drunkard and consider how he can ill afford to take these chances. This action on the part of the sensible employee will also tend to reduce the ranks of the occasional drunks.

A little leeway should be given to the occasional drinker who happens to be an expert worker. By giving this worker one or two days off a month the overseer enhances his chances of keeping the goodwill of his best employees. This may eventually lead to the discontinuance of the drinking habit once the employee becomes fully aware of its bad effects and of the cooperation of the overseer in trying to make him realize such effects.

Sidney Stein
(Massachusetts)

Ways and Means of Cooperation

Editor, Overseers' Corner:

Cooperation requires team work, with every one pulling his share of the load, including both the overseer and the employee. There is no room for stalling, soldiering or shirking. All must be yoked up together and their efforts synchronized to produce maximum results. Many a worker with good intentions gives poor cooperation because he does not recognize the important things to do. In these cases, the overseer and the worker should go hand in hand or there is no success and in most cases a loss. In nearly every organization, some employees will be found who are continually crying for greater cooperation on the part of the company, and who work with little thought of the opportunities and advantages that their company has already provided. The workers themselves can largely determine how much additional cooperation will be given by the use which they make of the cooperation already given them. It is always the overseer's duty to try to keep the workers interested and get the idea across to them that the company is not against them.

When he can tactfully get others to see the problems of the company and make them interested in its growth and achievements, he establishes himself as an important link between the management and the men—and puts himself in line for advancement.

—Dewey Cates
(High Point, N. C.)

Lessons in Safety

REPAIRING LOOMS: A fixer was repairing a loom and reached into the same while it was temporarily out of gear. Another employee came along and turned the loom on, and the fixers' arm was caught between the frame of loom and crankshaft, severely lacerating it. Lessons learned from this accident:

1. Fixers should always throw the switch on machinery before repairing same.
2. All employees should look to see that no one is working on machinery before starting same.
3. Crankshaft guards should be placed on all looms where shaft hits close to frame.

* * *

AIR: Employee had punctured his left palm with a pick while washing a die insert. Later, holding the insert in his palm, he dried it with an air pressure hose; the air entered the puncture would, causing immediate inflation of the hand. If an air bubble had entered the blood stream through a vein or artery, the result would have been fatal.

—*National Safety Council News Letter.*

Overseers' Practical Helps

Checking Up on Broken Parts

Overseers sometimes look at broken parts, wonder for a minute if anything can be done to prevent repetition, and then forget about it, due to some interruption. Considerable benefit and enlightenment can be gained by saving all worn and broken parts. On looms, for instance, in addition to other parts, bolts, nuts, pickers, picker-sticks, and shuttles, should be included.

On 500 looms an inspection of broken parts every three months seems to work satisfactorily. The iron parts can be sorted out in about 1 hr. by a weave-room helper; pickers, picker sticks, and shuttles are, of course, in their own deposit boxes. A couple of hours spent by the overseer, superintendent, and perhaps one or two key loomfixers in studying these parts will bring to light plenty of material to think about for the next three months.

It isn't just the number of dobby jacks or the number of picking shafts that counts. Of course this is a part of it, and the quantity of each and the date are noted for future comparison. The real question is, "Why did 112 of those 204 picker sticks start splitting from exactly the same point, and is it because we should give more careful attention to the condition of the bumper leathers?"

Next, of the box of 120 rawhide pickers, we find that perhaps 35 were renewed because of being torn upward from the center of the striking surface. "Among my tried and true loomfixers, can it be that some don't know how to center a picker?"

There are 45 shuttles; we look them over, but do not immediately notice break repetition. Then we consider that we have two makes of shuttles in the looms, compare the number of each, and make some fairly certain deductions as to their comparative serviceability.

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Why picker shafts should break is another problem. They do, because here are several of them. We decide to try putting stronger lock washers on the picker-bearing bolts, as they seem to get loose more often than they should.

Now, we come to the dobby jacks. We recall that last summer when running some pretty heavy 200-den. rayon warps, the underneath motions were complained about as not strong enough to pull the harnesses down firmly, even when doubled up. So we put on heavier springs and hooked them direct to the floor. The underneath motions were put back when the 200-den. warp order was finished, but here is proof that the dobby jacks suffered, and just how much.

This system does not, of course, eliminate the usual daily observations, but gives one a background of knowing what is going on and a feeling that carelessness is not getting by on a large scale. It is also an endless source of material to be worked upon when things are running so well that there is time to spare. Overseers or superintendents who install and give a fair trial to a system such as this will find costs of repair items decreasing, and machines operating with less trouble and making better products.

—C.S.M.
(*Massachusetts*)

Wrong Picks Per Inch

One of the most common mistakes in the weave room is wrong picks per inch, and in the writer's opinion there is no reason at all for weaving a piece of cloth with this fault. Of course, there may be a slight variation—perhaps one or two picks—but weaving cloth 4, 6, 8, or more picks out of the way is out of reason. Loomfixers or changers should change their gears in accordance with instructions for the particular style; however, they may occasionally put on the wrong gear, or there may be something else wrong which will, even with the correct change gear, give an incorrect number of picks. It is therefore desirable for the second hand to check the picks of the cloth on each loom after a new warp has been put in, and after not more than 1 or 2 yd. have been woven. With this double check there is no reason why any cloth should be woven with an incorrect number of picks.

Of course, one can argue that the second hand already has too much work, but it only takes a few seconds to check up on the number of picks per inch, and it is well worth the time.

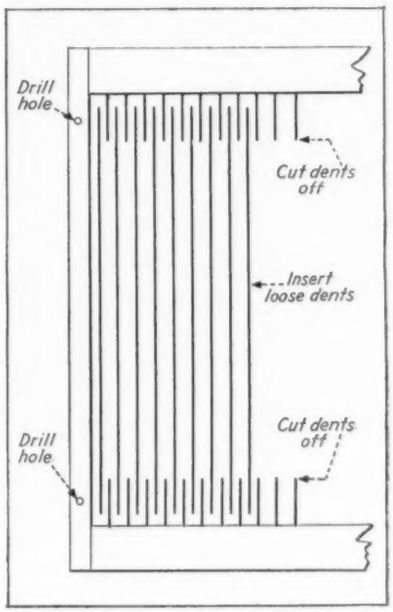
—P.S.
(*Massachusetts*)

Renewable Space Reed

We have found a simple device for saving time and expense in the using of space reeds for warping machines. Cut out all dents in an old space reed, leaving about ⅜ in. of dent wire at top and bottom, as shown in the accompanying sketch. Then, drill a hole at the top and bottom of each of the side supports of the reed. Next, cut four pieces of rod ¼ in. wide and long enough to reach across the reed. Drill a hole in each end of each rod, in such a manner that they match with the holes already made in the side supports of the space reed.

Now, place a dent wire between each of the cut out dents, and fasten the rods in place at front and back, and top and bottom, with screws. The space reed is now ready for use.

When dents become cut, they can be changed by loosening the side screws, lifting out the damaged dents, and inserting new ones. Of course, a supply of loose dents should be kept on hand for replacement purposes.



Method of making renewable space reeds

—JOHN PICONE
(*New Jersey*)

Questions and Answers

Finishing Cotton Fabric

Technical Editor:

We are inclosing two samples of cotton cloth—one is marked "A", and the other one is marked "B"; we will be very much obliged if you will give us suggestions as to how to obtain a finish and feel like the sample "A," with its full, thick, and mellow touch.

Sample "B" is our make, and in processing we first use a sizing bath containing: 100 liters of water, 2 kilos of starch, 6 kilos of dextrin, 2 kilos of talc, 4 kilos of glycerine, and 1 kilo of salt.

After passing the cloth through the sizing bath, it is passed between a pair of squeezing rollers, and delivered to a stretching machine. Then it is passed to a triple-row, steam-drum dryer, and is finished. But it lacks the mellow and thick feeling of sample "A", and that is what we want. (8591)

We believe you will need to change both your formula and finishing method to obtain the desired finish. In the first place, it is our opinion that the use of glycerin and salt is inadvisable. Furthermore, we believe too much dextrin has been used and not enough starch. The formula seems to be deficient in softening properties, yet at the same time the size is not concentrated enough.

The following formula should more closely approach the feel and handle desired: 70 kilos cornstarch, 20 kilos talc, 20 kilos glucose or corn sugar, 2 kilos 50% sulphonated tallow, and ½ kilo raw cocoanut oil; to make 400 liters of finished size.

The cloth should run through this size bath in the slop-pad manner; that is, run the cloth down through the size and up through the nip of the squeeze roll then onto the strech-ing machine or tenter. From this point the goods go to the can dryer, where they are dried and conditioned. The goods should then be slightly dampened or dewed, and run through a friction calendar with a heated roll, if a luster similar to the sample is desired.

If the piece processed in this manner is too mellow in hand, the amount of sulphonated tallow should be reduced. On the other hand, if a more mellow feel than this formula provides is desired, the amount of sulphonated tallow should be increased. If the goods acquire too much weight, the nip of the squeeze

THE OVERSEERS' CORNER

roll on the size box should be increased. Emphasis should be placed on the stretching machine, which we assume is a clip tenter. These goods should be tentered or pulled out in width to eliminate the bowing now prevalent in sample *B*.

Carbonizing White Softs

Technical Editor:

We are carbonizing white softs by the wet process. This material contains a certain amount of decorative rayon yarn; on carbonizing the rayon turns black, but it is too tough to dust out. Can you suggest a solution to our problem? (8611)

It is difficult to suggest an exact solution for this problem, since the information furnished is not as detailed as might be desired. However, the following suggestions may be of value.

Acetate rayon is more resistant to carbonizing than other types. The yarns in question may be of this rayon; thus, the very nature of the yarn is responsible for the difficulty.

It is also possible that the processes following carbonization proper may be causing your difficulty. Soda neutralizing will probably assist the removal of the blackened yarns. Increasing the baking temperature, and/or the time in the oven, to such an extent that complete dehydration of the cellulose would be insured, might also prove advantageous. A check on the closeness of the rollers and beaters of the dusting machine may show that they are not operating as efficiently as is necessary to crush the carbonized particles.

Bars in Hosiery

Technical Editor:

One of our hosiery customers is encountering spasmodic difficulties when dyeing stockings which are knitted from one end of 1/50s worsted yarn and one end of 1/50s merino yarn, containing 50% wool and 50% cotton. Two ends—one of each yarn—are run together in one feed on the knitting machines. These stockings, after dyeing, occasionally show light and dark bars. The yarn is all from the same lot and apparently the bars come without any regularity.

If you can send us any information which will help decide what is causing the trouble, we assure you it will be appreciated. (8516)

Examination of the stocking submitted shows that it is streaked throughout with light and dark bands varying in width from one course to 1 in. In some cases, the streaks change from light to dark in the same course. Invariably, however, when a dark band appears on the face of the fabric, the back appears light; and vice versa. Microscopic examination of the yarns shows that that containing 50% cotton has dyed uniformly lighter than the all-worsted, due to the fact that the large percentage of cotton has not been appreciably dyed. In other words, the union dyeing of the two yarns in the stocking was not very satisfactory.

You have stated that both yarns are run together in one feed. This is a most unsatisfactory method of blending two yarns together, as it is quite impossible by this method to lay in the yarns in any uniform manner. Due to varying bobbin tensions or yarn size, one yarn might lie on top of the other for a fraction of a course, a whole course, or even 30 courses, as is illustrated in the stocking submitted.

This streaked condition can be remedied by one of the following two methods, either of which will make all the stockings uniform throughout and facilitate matters for the dyer, since careful union dyeing will not be necessary. The first method consists of plaiting the two yarns on the knitting machine.

A second and more satisfactory method, provided doubling and twisting facilities are available, is to twist these two yarns together before they are knit. This will definitely insure a uniform fabric and—more important—will require only one yarn feed.

"Where do we go From Here?"

Sherman Rogers, former associate editor of *The Outlook* magazine was heard at a series of gatherings in Macon, Columbus, and Porterdale, Ga., May 22 to 24. Mr. Rogers has also served as associate editor of *Success* and *Liberty*, and has been a frequent contributor to *Saturday Evening Post* and other periodicals. He is a colorful speaker, drawing on his wide personal experiences as laborer, lumberjack, stevedore, organizer, economist, and labor adviser.

The meetings were arranged by committees from the workers' organizations in the several mills of the Bibb Mfg. Co., headed by Donald Dudney of Payne Mill, general chairman, and grew out of a desire to make this talk available to Bibb employees, as well as to employees of other mills. Many heard Mr. Rogers address Textile Operating Executives of Georgia in Atlanta, Ga., Mar. 11 (see page 66, April issue TEXTILE WORLD). Mr. Rogers' talk on "Where do we go From Here?" is a valuable contribution to the important subject of employer-employee relations.

Uneven Filling

Technical Editor:

We are inclosing herewith a sample of rayon satin which we received from one of our customers. There is an unevenness in filling effect which the customer states is not caused by a loom condition.

As we have never had a complaint of similar nature, we would ask you to kindly look into this and advise what you believe the trouble to be. (8529)

Examination shows that this defect is not caused by uneven or irregular filling yarn. We believe the filling yarn has not been worked properly, as the yarn has been pulled and stretched. This might be due to uneven tension, either in shuttles or quilling machines.

We note also that in this particular sample there is a bar effect which makes the defect more pronounced.

Preparatory Equipment for Rayon Weaving

Technical Editor:

Will you please advise me as to the machines, and quantities of each, we will need in operating a plant of about fifty looms working on crepe rayon and rayon? We desire to buy rayon in skeins, make our own warps, and do all work to finishing. (8552)

Machinery for a 50-loom plant should include 3 high-speed warpers, 10 winders, 8 quillers, 2 measuring machines, 2 twisting frames, 1 sizing machine.

From your question we are not quite certain as to whether you wish information regarding finishing machinery as well. If such is the case, please state whether you plan to do piece dyeing, skein dyeing, or what.

Worsted-Yarn Tolerances

Technical Editor:

Please advise us what the practice is in the worsted spinning industry with regard to spinning on count. What tolerance, either under or over the specified count, is generally allowed a spinner when yarn of a certain count is specified? Specifically, what leeway would be allowed on counts such as 1/15s, 1/20s, 2/20s and 2/40s? Granting a certain allowed tolerance in size of yarn delivered against size specified, what would be considered a normal or proper average for the whole lot? For instance, when spinning 1/40s, a test of an individual bobbin might indicate 1/38s, which might be within the tolerance allowed; however, if the entire lot averaged 1/38s, would this also be considered adhering to the count of yarn ordered? (8613)

Standard yarn-number tolerances

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for worsted yarn, as set up by Committee D-13 of the American Society for Testing Materials, are as follows:

Single yarns, coarser than 12 typp (21.43 worsted count) permissible variation, ±5%; 12 typp (21.43) to 17 typp (30.4), ±3.5%; 17 typp (30.4) to 23 typp (41.1) ±3%; 23 typp (41.1) and finer, ±2.5%. Standard tolerance for all plied yarns is ±2.5%.

It should be noted that tests of yarns to determine their adherence to the above specifications should be made under standard atmospheric conditions.

The standards set are specific, and state that the average yarn number must come within the given tolerances. Applied to 1/40s worsted, this means that the average count of the delivery, to be acceptable, must be within a range of ±3%. 3% of 40 is 1.2—therefore, if the average counts are within a range of 1/38.8s to 1/41.2s, the delivery will be considered to be up to count. The same method of determination can be applied to yarns of other sizes.

In the mill, intelligent use of the weigh box will prevent wide variation in count from individual bobbins. Cooperation in both drawing and spinning should easily keep average count within the tolerances specified.

Simple pattern fabric for outerwear

Simple Outerwear Patterns

Produce effective designs on currently popular fabrics

By LESLIE MINER

IN AN ARTICLE in the April issue, Mr. Miner outlined the procedure for making currently popular drafted-pattern fabrics. He now discusses the method of making a simple pattern fabric. This particular fabric and those described in the April issue were produced on a leaded spring-needle machine. For the benefit of younger readers, it should be pointed out that pattern work, similar to that described in these two articles and that discussed by J. Frederick Cahill in our January, February, and March, issues, can also be produced on trick-top machines.

SIMPLE PATTERNS which are currently in vogue for outerwear, will prove particularly appealing to many manufacturers because, unlike drafted patterns, they are adaptable to almost any size cylinder and can be divided into very nearly any number of needles. It is necessary only to work out these simple patterns on the machine.

Pattern Plans

Such a pattern is represented by the illustration above at right. This is a three-needle pattern, with one needle over to produce the diagonal effect in the fabric. Following are the plans for this fabric:

Size of cylinder.....24 in.
Gage of machine..... 18
Feeds on machine—three pattern and one plain..... 4
Size of pattern wheels 120 needles once around
Stitch to the foot of yarn..54 needles
Needles in cylinder..... 886

Feed No. 1 is plain, and knits two ends of novelty yarn and one end of 1/28 wool. Feeds Nos. 2, 3, and 4 are pattern and block 2 in and 1 out, repeated all the way around the wheel. Each of the pattern feeds knits one end of 45/2 mercerized and one end of 1/28 wool. All pattern wheels should be set on the same needle—1 out.

This pattern can be made in many different arrangements of yarn; e.g., by using novelty yarn on the plain feed and wool or cotton yarn on all pattern feeds. The novelty yarn is nub yarn and should be used only on the plain feed. Often by using a colored yarn on the plain feed, one can produce a very attractive pattern.

When Calculating Blends

Percentage of loss in weight during finishing must be borne in mind

By R. A. C. SCOTT

THE PROPORTIONS in which scoured virgin wool and reworked wool, silk, cotton, or rayon are blended together determine the loss in weight which will take place during finishing of a fabric produced from that blend. No hard-and-fast rule can be laid down for computing this loss, which results from the removal of oil, grease, and dirt from cloth. It is possible, however, by studying the raw materials from which a fabric is made to predetermine the loss within very close limits.

New and Reworked Wool

In the case of fabrics composed wholly of scoured virgin wool, the loss between loom and finished weights averages about 16 2/3%. When reworked wool is used, the difference between grease and clean weights is greater than in the case of new wool. This applies whether the reworked material is in the form of woven or knitted garnetted clippings or yarns. The reason for the greater loss is that during rag picking or garnetting the rags are given a fairly heavy oiling, for the purpose of softening them and lessening fiber damage during disintegration. Moreover, the clips or yarns contain a variable amount of other extraneous matter which must be removed in finishing. If the rags are carbonized before garnetting, not only all vegetable matter, but a large percentage of the dirt, etc., will be removed, and this fact will have to be taken into con-

THE OVERSEERS' CORNER

sideration. Further loss in weight will be caused by the fact that the tearing down of the rags during garnetting damages the fibers considerably, with the result that there are many short fibers in the resulting material. A large percentage of these fall out during scouring.

Considering all these contributing factors, it may be safe to average the loss on reworked wool mixes at 25%. Naturally, some stocks will be in excess of this figure, while others again may be under; but, as an average based on actual practice, the figure will be found to be fairly accurate.

Silk, Cotton, and Rayon

Silk waste, due to the processes to which this fiber is subjected during the transformation from cocoon to finished yarn, is much cleaner than reworked wool. Consequently, the loss in weight during finishing of a fabric containing silk waste is proportionately decreased. An allowance of 10% should represent a fairly accurate figure. Occasionally, silk noils may still contain a small percentage of the natural gum; it is therefore advisable to test such stocks before using by boiling a small sample in hot water and soap.

If cotton or rayon garnetted clips and threads are used, a larger percentage of extraneous matter is likely to be found than in the case of cotton roving or rayon staple. In the former types the loss in weight varies from 5 to 10%, and may be averaged at 7½%. In the latter a 5% allowance should be more than sufficient. When blended with wool or any other animal fiber, no oil is applied to either the cotton or rayon stock, since to do so would make satisfactory carding more difficult.

Using as a basis for calculation the percentages already mentioned, the approximate loss in weight between loom and finished states of a fabric made from a blend containing any or all of these stocks can easily be ascertained. For example, let us suppose we wish to estimate the loss of a fabric which will contain 25% scoured virgin wool, 25% shoddy, 10% silk, 20% rayon waste, and 20% rayon staple. Assuming the size of the batch to be 1,000 lb., the respective amounts of stock required would be as follows:

Virgin wool	250 lb.
Shoddy	250 lb.
Silk	100 lb.
Rayon waste	200 lb.
Rayon staple	200 lb.
Total	1,000 lb.

Estimated loss on the virgin wool would be 250 lb. x 16 2/3%, or approximately 42 lb.; on the shoddy it would be 250 lb. x 25%, or 63 lb.; on the silk, 100 lb x 10%, or 10 lb.; on the rayon waste, 200 lb. x 7½%, or 15 lb.; on the rayon staple, 200 lb. x 5%, or 10 lb. The total of these would indicate a loss of 140 lb. per 1,000 lb., or an average loss of 14%.

Losses in Blends

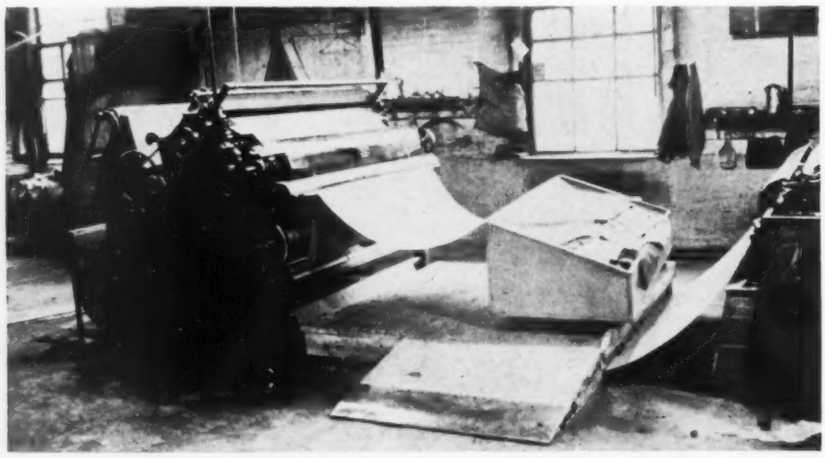
In this manner a fairly accurate estimation of weight can be computed for any blend, provided the characteristics of each of the raw materials is known. The percentage figures given, especially those relating to shoddy, may require some adjustment to fit individual cases, since the variety of qualities available is so varied that anything approaching a standard is hardly possible. However, with this exception the percentages will be found sufficiently accurate for all practical purposes.

Revamped Shearing Unit

Increases production 30%

By JAMES S. SARGENT

SHEARING equipment in a northern mill has been rearranged and supplemented with gadgets made in the mill shop so that production is 30% greater than previously. The old arrangement consisted of two double-cylinder shears and one single-cylinder shear set up so that each machine operated independently. The new arrangement consists of the old machines individually motorized and geared alike.



Shearing machines rearranged to give 30% more production. Note cloth passing beneath platform

Goods from the truck (shown on the platform) feed face-down into the single-cylinder shear, pass into a small scray behind the machine, and then run beneath the machine and the platform—moving forward over and under a series of rollers arranged to keep the goods off the floor. This arrangement delivers the goods face-up to the machine next in line for the first and second cuts, and again into a small scray from which it is taken by the third machine for the third and fourth cuts. The depth of each cut depends upon the desired finish of the goods. With a lapse of a few yards between each machine the delivery of the unit is continuous at the rate of 13 yd. per min.

The momentum of the cylinders is constant, and the use of a butted-seam practically eliminates headings. Three trucks were necessary for each machine when they were running independently, but with the new unit only two trucks are necessary. The number of sewings formerly necessary has been reduced 75%. The pieces are kept in groups of three and four during the remainder of the finishing routine. The platform, as shown, could be lowered into a pit if desired. This would keep the floor level and eliminate the short ramp.

LOOMFIXERS' MANUAL

RAYON AND SILK SECTION—*Chapter IV*

By H. E. WENRICH

Driving and Shipping

THE FOUR main subjects to be discussed in this chapter are boxes and caps, driveshafts and gears, loom-drive adjustments, and braking and shipping mechanisms.

When one is lining up bottom and top loom shafts, time should be taken for any required adjustment of the bearing boxes and caps, since properly adjusted boxes increase the efficiency of the loom. Further, since the picture of cloth weaving is constantly changing, and looms may have to be widened or narrowed according to the width of cloth in demand, a short study of box and cap adjustment is desirable.

Generally speaking, less attention need be accorded modern, precision-machined looms having roller-bearings than to those of the plain-bearing type. Rebuilt looms are exceptions to this rule.

It is of primary importance that all shafts be true. The bottom shaft is lined up first, the top shaft next. If the top- and bottom-shaft gears are improperly meshed, the loom will not function as it should, production will be lower and of poorer quality, and boxes and gears will wear out much more quickly than is normal.

Depth of Mesh Important

When gears are meshed too deeply, there is plainly discernible a harsh, grinding noise. Its intensity will be increased if either gear is not perfectly true. To decrease depth of mesh, raise the top shaft by applying packing under the box, or lower the bottom shaft by filing the bottom of the bottom box.

Gears which are not meshed deeply enough will cause a sharp, singing noise. To correct this fault, either lower the top shaft by filing the bottom of the top box, or raise the bottom shaft by applying packing beneath the bottom box.

When gears emit a slight grinding noise, it will be found that one shaft or gear is out of line sidewise. This requires that the box be moved to front or back, as the case may be. On some types of looms, to make this adjustment the bolt holes in the box must be enlarged along the side in the direction of correct adjustment.

There are no set rules or measurements for correcting box troubles. The best method is to follow the suggestions given above, adjusting the boxes with the mesh of the gear teeth. After adjustments are made, always be sure the setscrews are tightened sufficiently to prevent the boxes from working loose.

Proper Lubrication Necessary

Lack of oil and grease will do considerable damage to any type of box. On plain-type bearings the shaft is often cut so badly that a new one is necessary. Sometimes, however, a new end can be welded on, thus eliminating the expense of a new shaft.

Plain-bearing boxes which are worn can be replaced at once. On the other hand, shafts which are ruined should be run until a cut or warp is woven out, at which time the repair can be more easily and better made. To do this, place leather or tin packing around the shaft inside the worn box.

***MUCH OF the material contained in this installment refers to the older silk and rayon looms and not to the modern types now being manufactured. However, since it is estimated that more than 60% of the silk and rayon looms installed in mills in this country are over ten years old, this discussion should be helpful to the majority of loomfixers in this branch of the industry.*—Editor**

When installing new boxes, or new caps on old boxes, the caps must be fitted carefully in place. Caps which are too loose allow the shaft to jump a trifle in the box when the loom is picking. This permits loss of a certain amount of pick; and in time may break the bolts, setscrews, or the cap itself. In fitting caps, file the edge down until a fit has been made, which will prevent jumping.

If caps are fitted too tightly, the boxes will become heated, wear down the bearing surface, and slow the loom. To loosen tight caps, place thin shims between the box and cap, adding additional shims until correct clearance has been secured.

Broken Cap Screws

When cap screws are broken, looms will bang-off time after time until the break is repaired. If a loomfixer adjusts a loom to give additional pick so the shuttle will be driven across, and is again called for bang-offs, he should turn the loom over by hand, looking at the bottom-shaft box to ascertain whether the cap screw is broken. Occasionally the setscrew will remain in the box, and the loomfixer may not notice the broken screw. But when the loom is turned by hand, if the cap screw is broken the cap will rise as the picking ball goes over the shoe.

When a loom has been running with one cap screw broken, it is wise to replace both the unbroken and the broken cap screws. This is because the remaining screw, even though no break is noticeable, will have been weakened to such an extent that it will break later, causing additional trouble.

Cap screws which are broken off down in the box can often be removed by using a sharp, thin, pointed punch. Tap the punch with a hammer in light, snappy taps to prevent the metal burring along the edge of the hole. A small amount of turpentine or gasoline poured on top of the broken screw will penetrate down the threads quicker than kerosene, allowing the broken part to be removed with less trouble. However, there are times when oversize cap screws, which cannot be removed in the above manner, have been used. In such cases, the box must be removed from the loom, and the broken screw removed by drilling through it and using an easy-out.

If the mill is equipped with a welding outfit, broken cap screws can sometimes be removed by placing a nut over the hole and welding the broken screw to the nut by placing the weld down through the nut hole. After the metal has been cooled, the broken piece is removed by using a wrench on the nut.

(Mr. Wenrich's discussion of the various methods of timing, adjusting, and repairing the numerous parts connected with driving and shipping motions will be continued in an early issue.)—Editor.

LOOMFIXERS' MANUAL

COTTON SECTION — *Chapter V — (Concluded)*

By IVAR MOBERG

Harness Motions

TAPE-SELVAGE motions are so closely related to harness motions that they can appropriately be discussed in the same chapter. These motions are used in weaving fabrics in which self selvages would place so much strain on the selvage yarns that they would not stand up during weaving; also in cases in which it is desired to insert two or more picks in each shed; and, in some cases, merely to add to the attractiveness of the fabric.

There are numerous types of tape-selvage motions, but they all serve to manipulate a small number of harnesses, at the selvages, independently of the regular harnesses. Tape selvages may have one or more ends drawn in one eye, and one or more picks per shed. The most common tape selvage is the 2x2—two ends drawn in the same heddle and two picks inserted in the same shed.

In order to insert two picks in the same shed, and still interweave the filling, it is necessary to have the selvage harnesses change their position while the shuttles repose at their respective sides. For instance, if a shuttle has just entered the left-hand box, the left-hand selvage harnesses must change their position before that shuttle is picked from the box. The right-hand selvage harnesses, in the meantime, remain unchanged; the change of these harnesses taking place one pick later.

Fig. C54 shows the Stimpson selvage motion. As can be seen, the cams are located on a separate selvage-motion shaft, which is gear driven from the camshaft. The cams are of the double-track type; i.e., one side of the cams produces $\frac{1\ 1}{1\ 1}$ weave and the other side produces a $\frac{2}{\ \ 2}$ weave. This motion is one of the few in which the back harness is given greater movement than the front, to compensate for its greater distance from the fell of the cloth.

Setting and Adjusting

With the regular harnesses even and at the correct height, attach the selvage harnesses to their harness straps and hang them over the selvage top-roll. Move the selvage harnesses until the eyes are even. Adjust the length of the top strap so that it will hold the eyes of the selvage harnesses level with those of the regular harnesses when the shed is closed. Move the selvage-roll-bearing bracket on the arch of the loom until the selvage harnesses, when vertical, just touch the body warp.

Place the selvage treadle-studs in one side or the other of the treadles, depending upon which will properly position the studs underneath the selvage harnesses. Slide the bottom selvage-roll on the roll shaft until it is directly beneath the selvage harnesses; in this position tighten the setscrew in the collar on each side.

Turn the selvage camshaft until one of the cams will position the treadle in the center of its movement, then attach the middle harness-strap to the front harness and the bottom strap to the back harness. With the selvage harnesses still even, attach the middle strap to the inside extension on the treadle stud. Place the bottom strap under the bottom roll and attach it to the outside extension of the treadle stud. (It is important that the straps be attached to the treadle stud in the order given; i.e., middle strap to the back, and bottom strap to the front.)

Now turn the selvage camshaft until the cam on the other end of the shaft positions its treadle in the center of the treadle's movement. Then adjust the straps for this side, in the same manner as before.

Turn the loom over until the reed is the distance from the fell of the cloth at which it is desired to have the selvage harnesses even. This may be at the same time as the regular harnesses are even, or it may be earlier, or later. If the selvage is weaving plain weave, turn the selvage cams until both selvage harnesses are even; then tighten the setscrews in the cam hub. If, however, the selvages are weaving $\frac{2}{\ \ 2}$, the selvage cams must be set to operate on alternate picks. After the lay has been placed at the desired distance from the fell of the cloth, turn the selvage cam on the side at which the shuttle reposes, until the cam has brought the selvage harnesses even. Next turn the loom over one complete revolution, bringing the lay to the same distance from the fell of the cloth as it was when the first cam was set. The shuttle will now be in the opposite box, and the other selvage cam should be turned on the shaft until the harnesses on its side are even. Any retiming of the selvage harnesses can now be done by loosening the driving gear and turning the selvage camshaft to the position required. Make sure that the selvage harnesses on the side of the reposing shuttle change position while the shuttle is in the box; otherwise the selvages will not weave in.

On selvage motions in which the cams are located directly on the camshaft, cams that produce a $\frac{2}{\ \ 2}$ selvage are designed with two tracks, one outside and one inside. The cam follower occupies one of these two tracks for a duration of two picks and then switches over to the other for two picks, giving the effect of a 4-throw cam. The setting of this selvage motion is identical to that previously described, with the exception that any timing of the cams must be done individually, by turning the cam on the camshaft.

After the ends have been drawn in the selvage harnesses, make final adjustments of the height of the harnesses in relation to the raceplate.

Defects Caused by Harness Motions

Defects caused by faulty harness motions are numerous, most of them constituting major imperfections. Some of the most common defects and their causes are discussed below.

A. *Skips:* These may run over one or two ends, or they may run over almost the entire width of the cloth. They result either from a shuttle picking over ends in the top shed, in which case they are called "overshots;" or a shuttle picking under ends from the bottom shed, in which case they are called "undershots." They may be caused by: (1) harnesses in the top shed which are not raised sufficiently to form a clear shed, due to slackness in harness straps, worn harness-cams, insufficient tension on top-motion springs, harnesses going too far down in the bottom shed, or harnesses being too far from the reed; (2) bottom shed being so high off the raceplate that a shuttle will strike the warp ends a glancing blow and become deflected into the top shed, due to jack straps being too long, worn harness cams, insufficient tension on pull-down springs, or insufficiently heavy jacquard lingoes; (3) harnesses timed too early or too late, thus forcing the shuttle to plow

its way through part of the shed—in the first case the harnesses will close over the shuttle before it comes out of the shed, and in the second case the harnesses will not open the shed in time for the entering of the shuttle; (4) faultily working dobbies, head motions, or jacquards.

B. *Rowiness, sometimes known as railroad tracks:* This defect has the appearance of picks lying in pairs, with spaces between the pairs. It may be caused by: (1) one shed being larger than the other, due to incorrect adjustment of harness straps, worn harness cams, harness straps running up on top-roll screws, incorrectly spaced stirrups in treadle notches, or unbalanced motion of dobby knives or jacquard griffs; (2) one harness set so low that the warp ends rest heavily on the backstay of the reed, a misadjustment caused by too short jack straps; (3) insufficient depth of harnesses, causing warp ends to bear heavily on heddle bars of the back harnesses when the shed is fully open.

C. *Cracks:* This is the name given to cracks which appear at regular intervals in cloths employing multiple harnesses for fancy weaves. The trouble, generally, is that one of the harnesses does not have the same amount of motion as the others.

D. *Mispicks:* These result from incorrect changes in the sequence of harness movements. They cause a break in the weave spanning the entire width of the cloth, and are caused by failure of the harness motion to actuate the harnesses as called for in the weaving plan. (This defect can not occur with positive harness motions, such as undercams with top roll, undercams with Lacey top motion, and side cams.)

E. *Reediness:* This is the name given to the defect caused when ends drawn in the same dent run together, forming groups with spaces between them. It can be attributed to a harness motion in which: (1) shed is timed too late, (2) bottom shed is too high off the raceplate, (3) sheds are of unequal size.

F. *Warp breakage:* This is recognizable by ends out and warp knots in the fabric. It can be caused by harness motions in which: (1) bottom shed is too high, and deflects the shuttle against the ends in the top shed; (2) shed is too small to allow free passage of the shuttle; (3) sheds are timed too early and close over the shuttle as it races through the last part of the shed; (4) sheds are timed too late, resulting in tardiness in opening up to permit free entry of the shuttle; (5) sheds are set too low, causing warp ends in the bottom shed to rest heavily on the backstay of the reed and be subjected to excessive abrasion; (6) some of the harnesses move excessively, in which case the warp yarns drawn in on those harnesses are subjected to greater tension than the rest of the ends; (7) harnesses have a jerky and/or flapping motion, due to treadle rolls not being in contact with harness cams at all times, or to too quick harness change; (8) dwells on harness cams are too short to allow sufficient time for shuttle to cross the shed.

G. *Tight selvages:* These result in excessive breakage of selvage ends and adjacent body ends. They can be attributed to tape selvage motions which are timed too late.

H. *Loose selvages:* This defect is usually recognizable by nicky selvages and by selvage-end breakage. The cause is too early timing of the tape selvage motion, which results in the shed closing while the filling is still pulling on outside selvage ends.

I. *Filling kinks:* These are caused by the filling lying in waves in the shed; when it is beaten up by the reed the excessive length pops out between the warp ends. While this defect is not directly caused by the harness motion, it can many times be eliminated by timing the shed early, so that it will close over the filling while it is still running out of the shuttle. When the shuttle comes to rest in the box, and further running out of the filling on that pick is stopped, the closed shed confines the waves, or extra lengths, of filling to the space between the selvage and the shuttle eye.

J. *Shuttle slap:* A faultily adjusted shed will cause the shuttle to slap the box as it enters. This is a serious condition, as it may splinter the shuttle and also become the indirect cause of bad smashes on bobbin transfer. Causes of shuttle slap attributable to harness motions, are: (1) shed so high that it raises the shuttle from the raceplate and causes it to slap the top of the shuttle box in entering; (2) shed timed so early that the shed partly closes before the shuttle is out of it—this causes the shuttle to be lifted off the raceplate and turned, so that it enters the shuttle box more or less cornerwise; (3) shed timed so late that the shuttle, as it enters the shed, must plow its way through the first part of its course—it is thus started on a wobbly flight, from which it can not recover until it enters the opposite box; (4) insufficient dwell on cams, especially on wide looms; (5) excessive flapping of harnesses, due to treadle rolls not being in contact with harness cams.

K. *Flying shuttles:* Of all the results caused by faultily working harness motions, flying shuttles are most dangerous and destructive. The causes of flying shuttles which can be attributed to harness motions are the same as those given under shuttle slap above, when these are so forceful that the shuttle leaves its course.

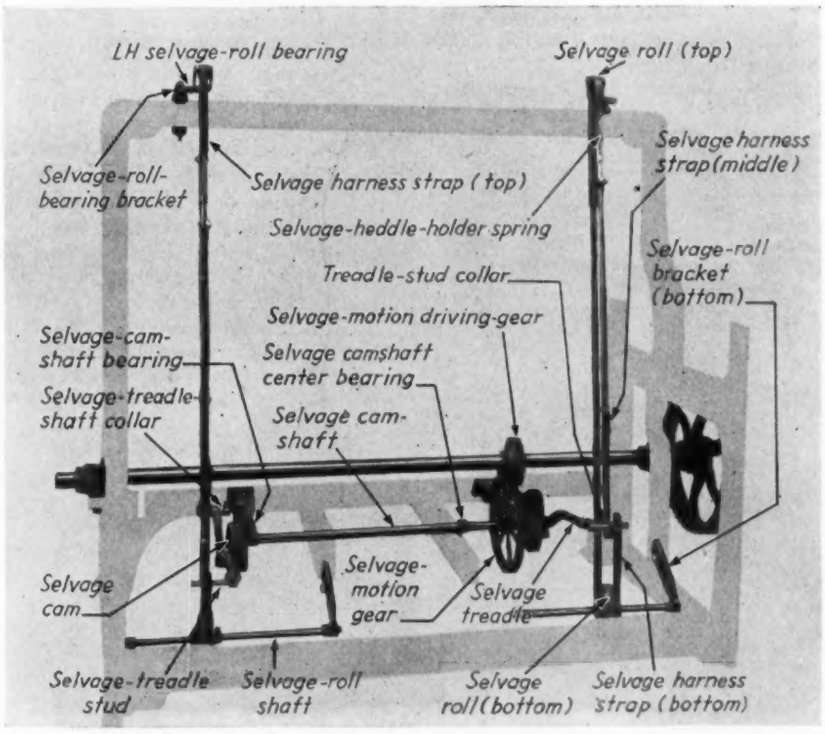


Fig. C54. Stimpson selvage motion

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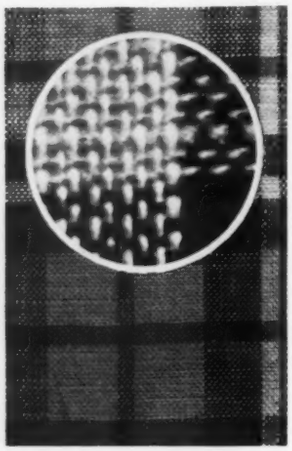
(The illustration of jacquard-harness-motion parts published on page 94 of the May issue should have been numbered C53.—Editor)

STAPLE COTTON FABRICS

By JOHN HOYE
Fabric Technician with W. Harris Thurston, New York

This forty-second installment of Mr. Hoye's series of articles on staple cotton fabrics — which began in the January, 1936, issue—concerns napped fabrics other than flannel, gingham, and mesh fabrics.



Standard plaid gingham, 32 in., 64x52, 6.50 yd.

NAPPED FABRICS

NAPPED fabrics other than flannels include heavy cloths, such as moleskins, broken twills, warp sateens, etc., made with ordinary-spun filling yarns, and cotton blankets and robe cloths made with American-cotton, part-wool, and China- or India-cotton filling yarns.

Heavier-weight blankets usually are made with two fillings to obtain the necessary weight and to produce a heavy, double nap. Ordinarily they are made 72 in. wide—in all-white, solid colors, or reversible color effects, or jacquard-woven designs. Light-weight all-cotton napped bed blankets, usually made unbleached, are referred to as sheet blankets. Also, cheaper light-weight cotton bed blankets are made with a percentage of waste cotton in the filling.

Examples of other napped fabrics:

Moleskin, 34½ in. 64 x 112 1.65 yd.
Broken twill, 56 in. 76 x 52 1.10 yd.
Warp sateen, 34 in. 118 x 72 2.00 yd.
Osnaburg, 30 in. 36 x 32 3.40 yd. clean
Coarse sheeting, 40 in. 48 x 48 2.50 yd.

GINGHAM

Ginghams are medium- and light-weight, plain-woven fabrics made of carded or combed yarns. They are woven on box looms, with white and colored yarns, usually in check or plaid effects. Generally they are woven so that the check or plaid forms a balanced pattern.

As a rule, ginghams in which two colors are used are called checks, and those in which three or more colors are used are referred to as plaids. Also, ginghams are woven with stripe effects and known as nurse's gingham, and, in a few instances, they are made in solid colors. When made in fancy weaves and of fine yarns, they are known as madras ginghams. Ginghams vary in quality, depending upon the type of yarns, fastness of colors, constructions, and weights. There are two qualities of carded gingham; viz., low quality and standard. Usually ginghams are made in 32-in. widths. Also, they are made in 25-, 26-, 27-, and 36-in. widths. Constructions range from 48x44 to 64 x 56 for carded ginghams and from 64 x 56 to 106 x 94 for combed ginghams.

Due to the finer cotton used in combed ginghams, they are much finer and softer than carded ginghams. Combed ginghams also are known as zephyr ginghams and, in lighter weights, tissue ginghams. Some of the finest are imported from Scotland.

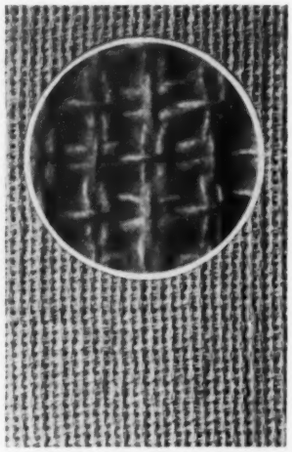
Low-quality gingham in 25- and 26-in. widths is used for seed and grain bags. Other uses for carded ginghams are house dresses, aprons, pajamas, children's dresses and bonnets, etc. Combed ginghams are used for better types of women's and children's dresses, suits, pajamas, and for decorative trimmings.

Warp yarns: 18s to 26s carded, and 40s to 50s combed. *Filling yarns*: 22s to 40s carded, and 40s to 60s combed.

Examples of low-quality gingham:

36 in. 52 x 44 5.30 32 in. 48 x 44 5.30
36 in. 48 x 48 6.60 32 in. 48 x 46 7.00
26 in. 48 x 44 9.36 32 in. 52 x 44 8.32

Leno-weave mesh fabric, 40 in., 68x48, 3.84 yd., combed yarns



Basket-weave mesh fabric, 39 in., 54x52, 4.00 yd., carded yarns

Examples of standard gingham:

36 in. 64 x 50 5.22 32 in. 64 x 52 6.50
36 in. 64 x 52 5.90 32 in. 64 x 58 5.76

Examples of combed gingham:

36 in. 106 x 94 6.00 36 in. 64 x 56 10.00
36 in. 82 x 76 6.00 tissue gingham
32 in. 88 x 84 6.40 36 in. 76 x 60 7.00
32 in. 80 x 72 6.00 clipped spot

MESH FABRICS

Mesh fabrics are made with a leno or basket weave, which produces an open or gauze texture. In appearance they resemble knitted fabrics; however, they have less elasticity and greater strength. They vary in construction and weight—some have an open mesh and are made of heavy ply yarns, while others have a closer mesh and are made of fine yarns or combinations of fine single yarn and heavy ply yarn. The leno-woven fabrics have a looser or more open texture than plain and fancy basket-woven fabrics.

Both leno- and basket-woven mesh fabrics, usually mercerized and dyed or printed, are used for light-weight sportswear. Very open ply-yarn mesh fabrics with an extra firm finish are used for summer sport shoes. Unbleached, loose, heavy leno mesh fabrics with colored-yarn check effects are used in large quantities for dish cloths, etc.

Yarns: 20s to 50s single, and 22/2, 26/2, 14/3 ply—warp and filling.

Examples of leno-weave mesh fabric:

40 in. 28 x 37 3.36 combed 2-ply warp and single-ply filling
40 in. 68 x 48 3.84 combed single-ply warp and filling
36 in. 26 x 26 1.68 carded 3-ply warp and filling

Examples of basket-weave mesh fabric:

40 in. 80 x 80 3.60 carded single-ply warp and filling
39 in. 54 x 52 4.00 carded single-ply warp and filling
38 in. 32 x 32 4.00 carded 2-ply warp and filling
37½ in. 88 x 72 4.45 combed single-ply warp and filling

NEW MACHINERY AND PROCESSES

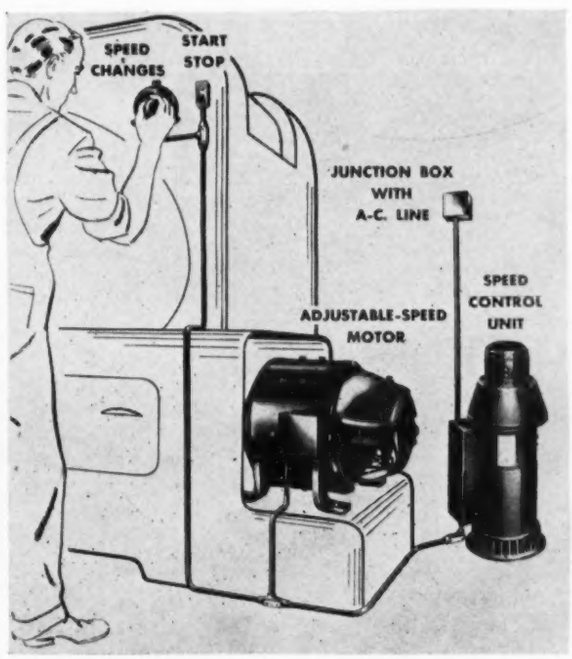
Adjustable-Speed Drive

An all-electric, a-c., adjustable-speed drive which employs a principle of speed control heretofore confined to large units has been announced recently by Reliance Electric & Engineering Co., Cleveland, Ohio. This new drive is expected to find a wide application in the textile industry. It consists of a control unit and an adjustable-speed motor which is applied directly to the machine to be driven. This speed-changing combination is available in sizes of from 1- to 15-hp. and permits an almost infinite number of speeds within an over-all speed range which may be as great as 12 to 1.

The unit has been designed for use on three-phase, 60-cycle, 220-, 440-, and 550-volt, a-c. circuits. Of vertical construction, it occupies a minimum of floor space and can be mounted at any convenient spot. The base is fastened to the floor or other support with three screws; careful leveling is unnecessary. Three wires from the a-c. power source are connected to the control units, as would be done with any motor and control. From the control unit, secondary circuits are run to the driving motor, to a speed adjuster, and to start-and-stop buttons. The speed adjuster and the buttons for starting and stopping the motor can be located within arm's length of the machine's operator.

The driving motor is a Reliance Type T, designed particularly for adjustable-speed service. It can be supplied in a variety of models, including inclosed fan-cooled, splash-proof, and explosion-proof; gear-motors may also be used. Connection to the driven machine may be by any of the methods regularly used for direct motor-drives. Considerable space is saved because no intermediate devices are required for the speed changing. The motor can be started and stopped without interfering with the speed setting, and the speed can be changed while the motor is in operation. Quick stopping is obtained by regenerative braking. No clutches of any type are used, since plenty of torque has been provided for all starting conditions. When the work calls for operation of the motor in both forward and reverse directions, a small drum-type reverse switch is used instead of the push-button station.

The new device was demonstrated last month at the plant of Cameron Machine Co., 61 Poplar St., Brooklyn, where it was applied to an improved high-speed slitting machine. Another application where it has already proved advantageous is for driving Sanforizing machines.



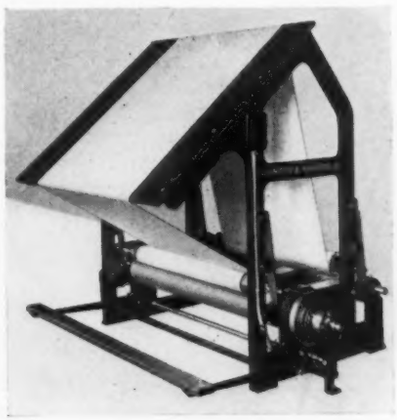
Adjustable-speed drive (Reliance)

Spinning-Ring Finish

A new finish, known as "Vitritex," is now being applied to the spinning rings manufactured by Pawtucket Spinning Ring Co., Central Falls, R. I. The smooth, glass-like surface given to the rings has, it is asserted, several advantages. Among these are a decrease in traveler consumption; a uniform surface on all rings, which produces equality in tension and balloon; inhibition of the corrosive effects of atmospheric moisture and gases; and the ability to start rings at normal production speeds immediately after installation.

Inspector for Large Rolls

At the recent Southern Textile Exposition, Curtis & Marble Machine Co., Worcester, Mass., introduced a cloth inspecting machine designed for the convenient handling of rolls of fabric up to 32 in. in diameter. The roll of cloth to be inspected is placed on the unrolling roll at the rear of the machine, passed down the table, and re-rolled at the front of the machine. Movement of the cloth is controlled by a foot treadle across the front of the machine, which is driven by a gear-motor mounted on the frame of the machine.



Inspecting machine (Curtis & Marble)

Two improvements which have been made since the machine was exhibited at the Greenville Show are addition of a treadle at the rear of the machine to facilitate unrolling of the amount of cloth required to start the piece; and a slight shortening of the table, which makes it easier for the operator to start winding of the cloth around the shell after its inspection.

High-Speed Spindle for Large Packages

To meet demands of present-day high-speed, large-package spinning, Marquette Metal Products Co., 1120 Galewood Drive, Cleveland, Ohio, has announced a roller-bearing spindle, known as the Novibra. Vibration is reduced to a minimum by means of a special device for true seat location and a full-floating damping footstep bearing. These are said to allow the loaded spindle to center itself at all times and at any speed, so that it runs in the center of the rotating mass.

Assembly and disassembly of parts is simple. Roller bearings and bolster are inclosed, so that no dirt or dust can interfere with moving parts. The system of lubrication is such that no oil or oil vapors can come in contact with tapes, belts, bobbins, or yarn. Lubrication is required only at infrequent intervals.

Advantages attributed to this new

High-speed spindle (Marquette)

spindle are increased production, reduced power consumption and maintenance costs, assurance of longer tape life, increased operator's efficiency, production of better yarn with fewer interruptions and less breakage.

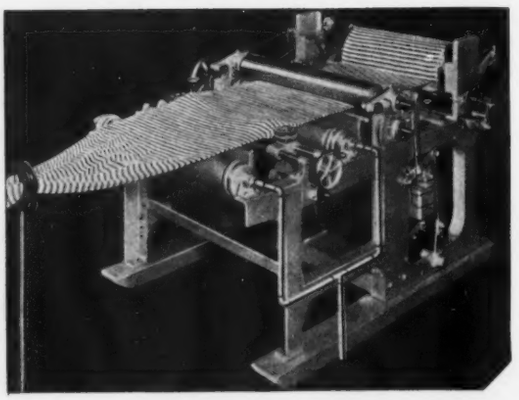
This spindle has been manufactured in Europe for several years, but heretofore has not been produced in this country.

For Steaming and Finishing

Tubular Textile Machinery Corp., 27 W. 20th St., New York, introduced at the recent Knitting Arts Exhibition a new Tube-Tex high-speed steaming and finishing machine. The machine is designed for warp-knit fabrics, sewn tubular, and circular-knit fabrics. It is said to handle cotton, rayon, woolen, and mixtures fabrics at speeds up to 44 yd. per min.

Built into the machine is a recent development, known as a striper. This, it is asserted, makes it possible to finish designs and stripes absolutely straight and free from distortion; the striper operates by means of an internal belt conveyor which puts every stitch into the same perfect alignment it had when the fabric left the knitting machine.

The new machine has an adjustable arrangement which permits changes in pressure, as well as complete roll separation. It is equipped with a variable-speed drive, which is adjustable while the machine is in operation. The standard size handles all widths up to 38-in. tubes. Warp-knit fabrics may be finished up to 60 in. wide in tubes or 120 in. in flat form. The sewn edge of warp-knit fabrics is trimmed off by a special cutter.



Steaming and finishing machine (Tubular)

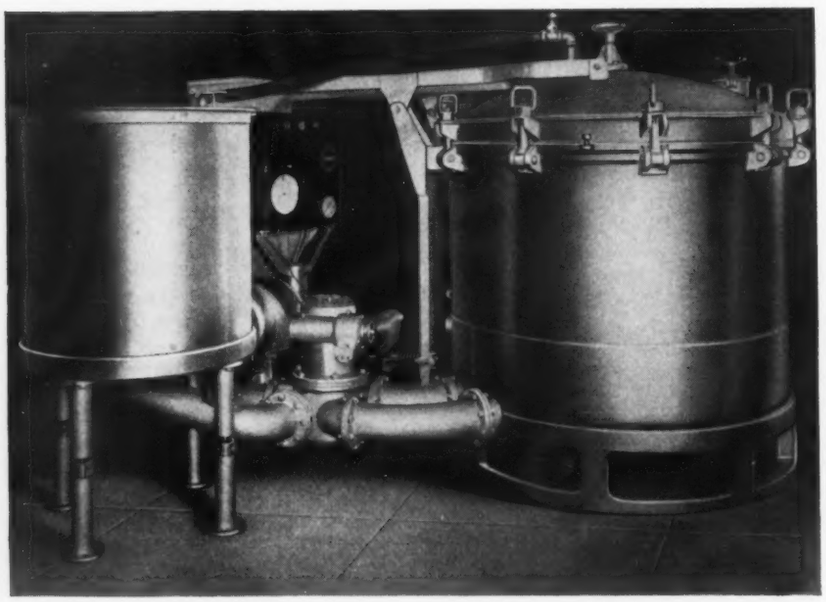
Stainless-Steel Package Dyeing Machine

Announcement of a stainless-steel package-dyeing machine has been made by H. W. Butterworth & Sons Co., Philadelphia. The kier is equipped with a center-and-lever hinged, full-separating, flat-closing, dome-type, counterbalanced cover; and is fitted with female conical joint to receive removable yarn carrier and gasket seat for male and female seal between kier and cover. Liquor overflows from the kier through a flexible discharge line, into an open-top expansion tank equipped with a bottom valve and connected by a return line to the suction side of the pump. The four-way valve is a combination manual and motor-driven automatic reverse type, and is equipped with driving motor.

Each deck of a double-deck vertical-spindle yarn carrier is equipped with non-clogging spindles which accommodate two 6x5-in. packages each. The decks can be used independently and, when both are used at the same time, they can be lifted separately or together as desired.

Mounted on the control panel are flow indicators, pressure gages, temperature recording thermometer, and automatic reverse control—all operate on 110-volt single-phase current. A direct-coupled, splash-proof, ball-bearing, insulated, dyehouse motor is used to drive the pump.

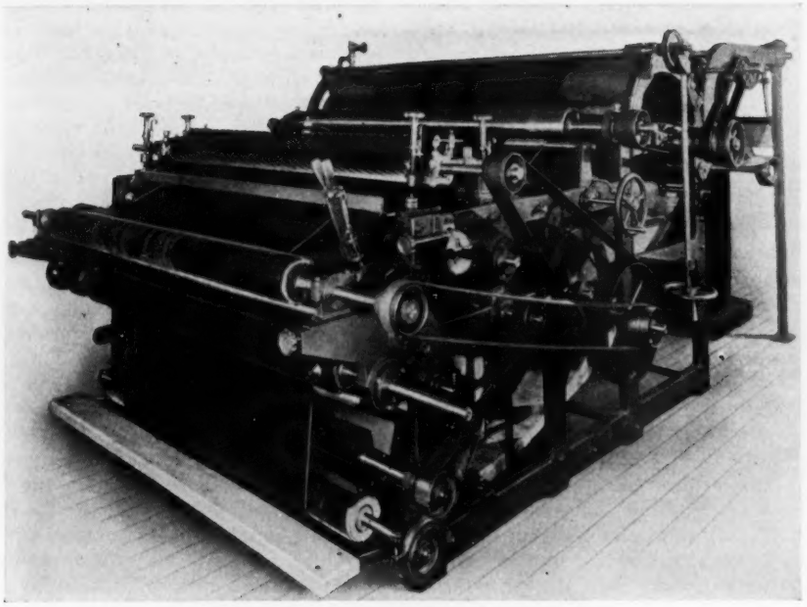
The kier and kier cover, expansion tank, heating coils, pump, four-way valve, pipe and pipe fittings, and yarn carrier are made of stainless steel. Bases for the kier, expansion tank, control panel, and pump are of cast iron. The machine is made in 80-, 120-, 160-, 240-, 320-, and 400-package sizes.



Package dyeing machine (Butterworth)

Shearing and Finishing Machine

Announcement has been made by Mawaco Machine Co., 476 Jefferson St., Brooklyn, N. Y., that their shearing machine has been constructed as part of a complete finishing unit for dyed pile fabrics, incorporating the operations of shearing pile, beating, tigering, brushing, steaming, lustering by heat, and drying, so that finishing is accomplished in one run through the machine. The machine is constructed in such a manner that



Shearing and Finishing Machine (Mawaco)

it performs all of the various finishing operations mentioned, or part of the operations, according to requirements for a particular type of fabric.

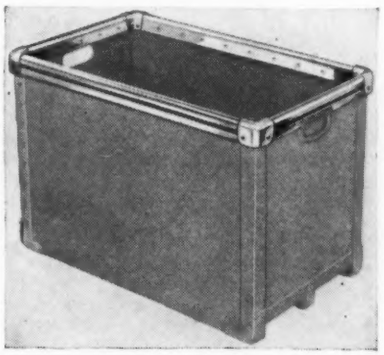
Cone Warping and Beaming Machine

Recently announced by Robert Reiner, Inc., Weehawken, N. J., is a Schlick high-production cone warping and beaming machine. The machine is equipped with a fully round and closed cone drum, and will warp as much as 1,000 yd. per min. It is stated that all sizes and types of yarn can be warped with equally good results.

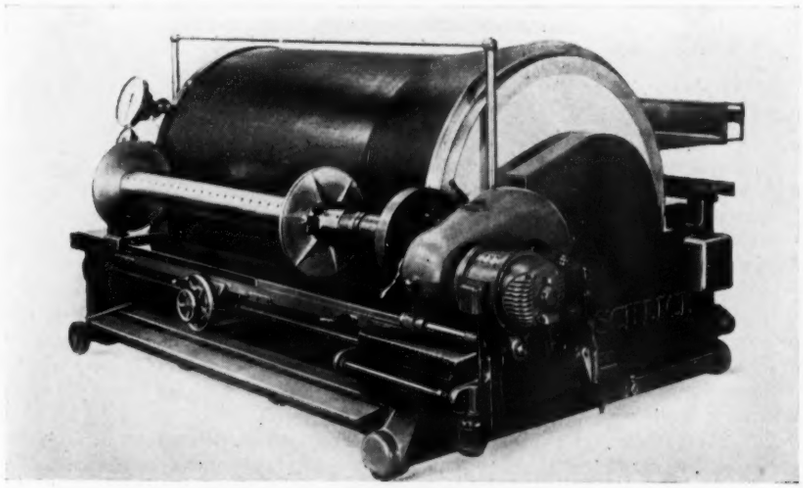
Other features of the machine include constant yarn speed at the beaming process, and special noiseless electric drive.

Fiber Box

An improved type of fiber box for general mill use has been announced by Continental-Diamond Fibre Co., Newark, Del. The box has an all-metal top rim, said to guarantee an absolutely smooth inside and outside, and to add strength. An additional feature cited is that the top rim, being all metal, will last as long as the box itself.



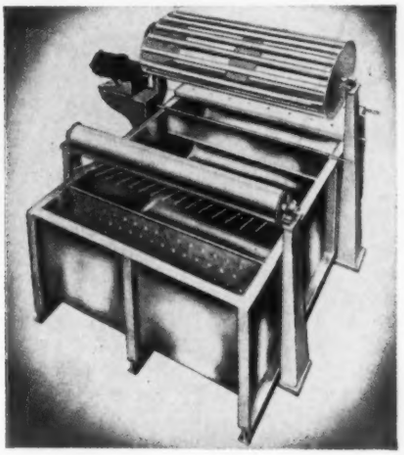
Improved Fiber Box (Continental-Diamond)



Warping and Beaming Machine (Reiner)

Stainless Steel Dye Box

S. Blickman, Inc., Weehawken, N. J., has recently introduced a stainless steel dye box. A method of building idler reels out of light-gage stainless steel has been incorporated and inside reinforcing has been added to insure rigidity. Reel supports are entirely independent of the box and relieve the tub of all mechanical strain. Advantages claimed are smoother surfaces, longer life, greater strength, and easier cleaning.



Stainless steel dye box (Blickman)

Useful Accessories for Textile Mills

Control Instruments. Three new recording and/or controlling instruments have recently been announced by Bristol Co., Waterbury, Conn. The glass electrode method of measurement is used in a new line of pH recorders and controllers. The rate of flow of one fluid in definite ratio to the flow of a second fluid is automatically controlled by means of a new flow ratio controller. Especially for survey work, a new round-chart portable recording voltmeter has been developed.

Fluorescent Lamps. A new 40-watt fluorescent lamp has been introduced by Hygrade Sylvania Corp., Salem, Mass. The lamp is 48-in. long, 1½ in. in diameter, and supplies 35 lumens per watt. It is available in either daylight or in warm white type.

Packaging Materials. A new type of container, known as the Qik-Fold box, has recently been introduced by Old Dominion Box Co., Inc., Charlotte, N. C. Features cited are the speed

with which it can be set up, its ready adaptability to many sizes and shapes, and its economical cost.

Speed Controls. An improved type of hydraulic automatic control for use with its variable-speed transmissions has been announced by Reeves Pulley Co., Columbus, Ind. The device functions by means of a two-way valve which directs flow of oil from a self-contained hydraulic power plant to either right- or left-hand side of a piston, thus operating it in either direction to increase or decrease speed.

Stack-Temperature Thermometer. Julien P. Friez & Sons, Baltimore, Md., are offering a pocket stack-temperature thermometer which incorporates a combined case-handle; the thermometer indicates temperatures up to 900° F., in 10° divisions.

Indicating Instruments. Foxboro Co., Foxboro, Mass., has introduced a key-switch cabinet indicating potentiometer to provide centralized temperature indication for numerous and scattered points in industrial plants.

V-Belt. An oil-proof V-belt, especially designed for use on machinery where excessive oil is encountered, has been developed by Dayton Rubber Mfg. Co., Dayton, Ohio; it is stated that neither splashing, spraying, nor dripping oil will affect the belt.

Grinders. Diehl Mfg. Co., Elizabethport, N. J., has added a new heavy-duty grinder to its line. Features of the grinder include an adjustable, non-glare light which is an integral part of the unit; safety eye-shield, equipped with shatter-proof glass; and dust-tight, ball-bearing motor.

Limit Switch. General Electric Co., Schenectady, N. Y., has developed a small, snap-action limit switch so constructed that it can be mounted easily in practically any position; the switch is designed especially for use on machine tools, conveyors, and other automatic equipment.

NEW CHEMICAL PRODUCTS

Flameproofing Compound

Development of a new flameproofing compound is announced by Quaker Chemical Products Corp., Conshohocken, Pa. This material, known as Quaker Pyr-E-Pel, is a white crystalline powder soluble in hot or cold water. Fabrics treated with this compound are said to be thoroughly flameproof and to possess no after-glow. The material can be applied on a pad, jig, or reel machine, either alone or in conjunction with other finishing materials. It is stated that it adds body and weight to the fabric, without stiffening it.

Dispersed Waxes For Warp Sizing

Ahcopan Waxes WSA and WSX, two new types of dispersed products designed primarily for use in warp sizing mixtures, have been announced recently by Arnold, Hoffman & Co., Providence, R. I. The waxes are said to be of high concentration, but are easily dispersed in the ordinary size-cooking operation. Advantages cited are that the new products eliminate undispersed wax, such as is commonly found floating on the surface of sizing solutions made up with the natural waxes, and promote better weaving warps by eliminating soft spots in the warps, due to the presence of excessive amounts of wax. Ahcopan Wax WSX is recommended particularly for use where the water supply is unusually hard, or where there is a tendency for the size solution to foam in the slasher.

Du Pont Vat Color

E. I. du Pont de Nemours & Co., Inc., announces the following new product: Ponsol Olive GGL Paste, a vat dye for khaki and olive shades on uniform cloths and other types of service fabrics subject to severe wear; it produces a much bluer shade than Ponsol Olive G Double Paste; dyeings possess very good fastness to hot pressing, light, laundering and washing; and good fastness to perspiration.

General Dyes

General Dyestuff Corp. announces the following new products: Supranol Blue GG, a homogeneous acid blue of very good fastness to light, wearing, and processing; it possesses good solubility, dyes evenly from a weakly acid bath, and is suitable for machine dyeing.

Diazo Brilliant Orange GRN Extra, a homogeneous developed dye yielding clear orange shades with Developer A and a fine golden orange with Developer ZA; it is distinguished from Diazo Brilliant Orange GRA Extra by a purer shade, better affinity, and superior fastness to washing and water, as well as better dischargeability, either with neutral or alkaline discharge.

Diazo Fast Red 8BL, a recently introduced homogeneous developed color which on cotton, rayon, etc., gives fine, clear bluish red shades of good average fastness properties, when dyed in the usual manner and developed with Developer A.

Indanthren Navy Blue BRP Paste, a vat dye recommended for the dyeing of cotton, rayon, and linen; dyeings are of excellent fastness to light, good fastness to washing, and good to very good fastness to water spotting.

NEW PUBLICATIONS

How the Wool Trade Functions

WOOL AND THE WOOL TRADE, by Alston H. Garside; Frederick A. Stokes & Co., New York; $2.50.

This work on the domestic wool industry by Alston Hill Garside, economist of the New York Wool Top Exchange, covers all phases from the production of the staple to the manufacture of apparel, and deals extensively with the organization and functioning of the New York Wool Top Exchange. During the earlier years of the last decade domestic growers supplied only about 60% of the apparel wool used in this country, says Mr. Garside. During the last few years they have supplied an average of 85%. The book is well illustrated and logically arranged thus providing a useful reference on the basic facts and economic principles of the wool trade. There are 575,000 wool growers in this country, says Mr. Garside, and the average production per grower is only about 643 lb.; however there are close to 800 growers who produce more than 40,000 lb. each.

On NLRA

THE WORKER, THE FOREMAN AND THE WAGNER ACT, by Russell L. Greenman; Harper & Brothers, N. Y.; $1.50.

Reading between the lines in this volume, one gathers that "See Not, Hear Not, Speak Not" is the best advice for a foreman so long as the Wagner Act, as it now stands, is in force.

The author points out through the citation of many cases decided by the National Labor Relations Board that the foreman, regardless of his inten-

tions, is speaking for the management and that the management is liable for the foreman's actions or speech; also, that the foreman, representing the management, is no longer actually boss in the plant, but that the Labor Board now occupies that position.

The book gives contradictory evidence in spots. However, taking it as a whole it is a simple book of etiquette for the superintendent or overseer, and informative reading for those in higher executive capacity inasmuch as the actual case histories given prove to those who have not yet run afoul of the law just what pitfalls lie in wait for them.

The book actually does more than it is supposed to do, for while its discussions seem to favor the National Labor Relations Act the decisions listed show the urgent need for further amendments to the legislation in order to place the employer on an equal basis with the employee in actual labor relations.

Labor Legislation in the South

CHILD LABOR LEGISLATION IN THE SOUTHERN TEXTILE STATES, by Elizabeth H. Davidson; University of N. C. Press, Chapel Hill, N. C.; $4.00.

The trials and tribulations of labor legislation is a difficult subject which is discussed in an impartial and scholarly manner in this ably written book. Miss Davidson fearlessly gives names, dates and places, backed up with documentary evidence, as she relates the story of legislative inroads on reactionary sentiment over a period of more than half a century as the work for the abolishment of child labor went on.

Stating clearly and indisputably the steps through which the present labor laws have been reached, the author takes the five southern industrial States one by one, and analyzes the child-labor movement from 1880 to the present day, giving exhausive tables and case histories.

For Buyers and Sellers of Linen

LINEN FABRICS; by Jessie Caplin; Riverside Press, Inc., St. Paul, Minn.; 60c.

This booklet contains explanations of the significance of the technical terms which are used to describe quality at the linen counter and in advertising. Its aim is to describe some of the factors which determine the price-value for the various kinds of linens. The book will be useful to salespeople, consumers, and students of linen-fabric merchandising.

Aid for Speaking in Public

TESTED PUBLIC SPEAKING; by Elmer Wheeler; Prentice-Hall, Inc., New York; Price, $2.00.

Assuming that the ability to speak in public is a decided asset in any business, we believe that our readers will find this book of some value. Although Mr. Wheeler indulges in no little repetition for the sake of emphasis, the volume as a whole affords interesting reading.

After wading through several rather laborious chapters defining the "sizzle," or lead-sentence, of a speech, the reader finds a few constructive hints on preparing and delivering a speech. The author describes the favorable effect that praise has on an audience, and then goes on to discuss the clothing, stance, and inflections of the voice employed by the successful speaker. The use of questions rather than exclamations is also advised.

Of particular interest is Mr. Wheeler's analysis of several famous speeches. He points out how closely the principles laid forth in "Tested Public Speaking" were adhered to in these masterpieces. The book is concluded with a reproduction of a stenographic copy of the author's speech on "Magic Words that Make People Buy."

NEWS OF SUPPLIERS

Fidelity Machine Co., Philadelphia, has acquired the business and patents of the **Germantown Machine Works.** The proprietor of the latter, George W. Lindley, is retiring. The company, founded in 1870, has specialized in elastic laying-in attachments, Raschel machines and special knitting machine parts.

National Drying Machinery Co., Philadelphia, has added C. H. Reumann to its sales organization. Mr. Reumann was formerly connected with the Philadelphia Drying Machinery Co.

Arthur L. Jenkins, treasurer of Emmons Loom Harness Co., Lawrence, Mass., was honored at a testimonial dinner April 24 commemorating his fiftieth year in the company's employ. He began work with the company at the age of 16, becoming a director at the age of 24. In 1923 he became assistant treasurer and finally in 1935 was made treasurer.

Arthur L. Jenkins, treasurer of Emmons Loom Harness Co.

Tolhurst Centrifugal Division, American Machine & Metals, Inc., will transfer its general sales offices and advertising department, now located at 100 Sixth Ave., New York, to East Moline, Ill., on June 1. The manufacturing plants are at East Moline.

Harold W. Horton has reentered business on his own account at 49 Westminster St., Providence, R. I., specializing in appraisals and liquidation. He was in business for many years at that address, but recently had been associated with Standard Mill Supply Co.

B. S. Roy & Sons Co. of Worcester, Mass., has opened a warehouse in Greenville, S. C., where parts for traverse and roller cotton-card grinders will be handled along with emery filleting.

Warp Twisting-In Machine Co. on April 15 changed its name to Sipp-Eastwood Corp. The office at 9 East 40th Street, New York, was closed and all business heretofore carried on will be conducted by Sipp-Eastwood Corp., 39 Keen Street, Paterson, N. J.

M. R. Adams, for two years engineer in the ring traveler department of the A. B. Carter, Inc., Gastonia, N. C., has resigned and removed to Providence, R. I.

Kempton Parts & Spring Co., Gastonia, N. C., is a newly organized concern which has been opened by Edward S. Kempton for the manufacture and sale of textile specialties.

F. Miller Fargo, Jr., executive-president of Calco Chemical Co., Inc., Bound Brook, N. J. has been elected president of the company succeeding Robert C. Jeffcott, who retired April 30. Mr. Fargo has been connected

with Calco since it was founded in 1915 by Mr. Jeffcott. In 1929 Calco became a subsidiary of the American Cyanamid Co.

Piedmont Color & Chemical Co., High Point, N. C., has added Edward W. Smith to its representatives. Mr. Smith was formerly superintendent of rayon plants in Central Falls, N. C., and more recently sales manager of William McLeod, Inc.

Davis & Furber, North Andover, Mass., are running several departments overtime owing to the demand from woolen mills for their "Simplex" spinning frames.

United States Rubber Co. has appointed Willard H. Cobb, for several years general factory manager of mechanical goods plants, to be general manager of the Mechanical Goods and General Products divisions. This position includes supervision of the manufacture of Lastex yarn and rubber thread.

Arnold, Hoffman & Co., Inc., Providence, R. I., have recently added Philip Lavoie to their staff as technical demonstrator of their various sizing, printing and finishing specialties. From 1906 to 1927 Mr. Lavoie was superintendent of all finishing departments for Mount Hope Finishing Co.; 1928-32, with Imperial Printing & Finishing Co.; 1933-34, U. S. Finishing Co.; 1934-36, Lincoln Bleachery & Dye Works; 1936-39, Arkansas Co. He will make his headquarters in the Providence office, and will travel throughout the South.

William McLeod Fraser, for the last year active in the engineering research and development program of Atwood Machine Co., Stonington, Conn., has been appointed works manager of that company.

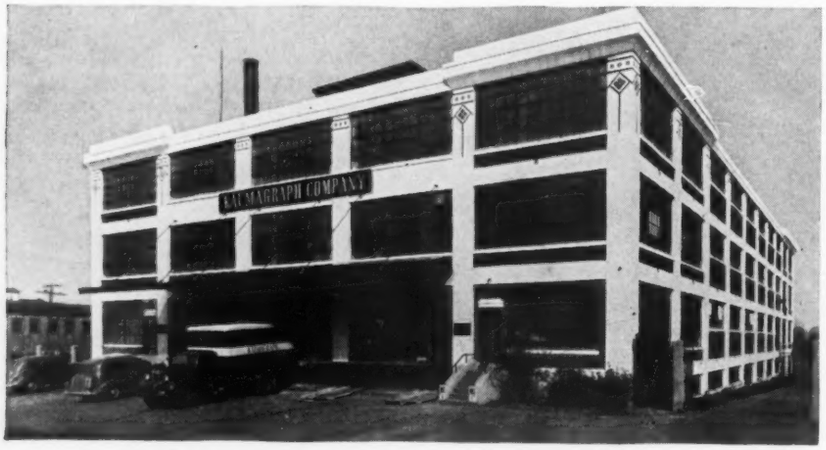
A. J. Wadhams, vice-president of International Nickel Co., and manager of the development and research division, has announced establishment of a new field office at 67 Wall Street, New York, under J. W. Sands.

W. F. White

W. F. White has been appointed manager of the Lighting Division of the Westinghouse Electric & Mfg. Co. at Cleveland. He succeeds F. R. Kohnstamm, former manager, who has been appointed sales manager of the Westinghouse Merchandising Division, Mansfield, Ohio.

American Tool & Machine Co., Hyde Park, Mass., will observe its 75th anniversary next September, having begun business near the close of the Civil War as a maker of lathes with the Fox attachment, elevators and leather-splitting machines. Early in its existence it began to manufacture the centrifugal machine invented by David M. Weston, its subsequent president.

Kaumagraph Co. opened its new plant at Wilmington, Del., on May 15, and, coincidentally, the new general sales office at 16 East 34th St., New York, was completely functioning. The removal of manufacturing facilities from New York was accomplished without interrupting production or customer service. The location in Wilmington facilitates shipment to textile districts. The district representation of Kaumagraph in Boston, Philadelphia, Chattanooga, Chicago, and Greensboro will be maintained as before. The personnel of the company is unchanged. Trowbridge Marston, president and T. H. Miller, secretary-treasurer, are at the general offices in Wilmington. George M. Porges, vice-president, will continue the sales direction from the general sales offices in New York.



View of new Kaumagraph plant at Wilmington, Del.

John C. Martin has left Ware Shoals Mfg. Co. to join Aridye Corp., Fair Lawn, N. J., as sales representative for New England. He was manager of finishing at Ware Shoals. Prior to that, he was associated with Hartsville Print & Dye Works, Pontiac Finishing Plant, and U. S. Finishing Co.

Stewart-Warner Corp., Chicago, has promoted Fred R. Cross, director of advertising, to position of sales manager for the Alemite Retail Sales Division. He assumed his new duties May 15. Mr. Cross has been connected with the company for the last 15 years.

Allis-Chalmers Mfg. Co., Milwaukee, on May 5 elected Walter Geist as vice-president of the company. Mr. Geist, who was born in

Walter Geist

Milwaukee, entered the employ of Allis-Chalmers in February, 1909. He developed the multiple V-belt principle of power transmission known as the Texrope Drive.

Briggs & Stratton Corp., Milwaukee, Wis., enters the variable-speed transmission field as exclusive licensee for the manufacture and sale of the Graham unit—now to be called the Briggs & Stratton variable-speed transmission. The company is in quantity production on several sizes as it has been making them for 18 months for Graham Transmissions, Inc. The complete line will cover units from $\frac{1}{8}$ to 10 hp., as well as a complete line of controls. L. A. Graham and A. Madle, formerly of Graham Transmissions, Inc., have joined Briggs & Stratton.

Leipzig Trade Fair's spring session, recently concluded, was the best attended in its history. A total of 331,256 buyers was attracted from 72 countries, an increase of 27,256 over last year. The Fair comprised 9,894 exhibits, including 557 from 32 foreign countries, a gain of 383 over last year.

THE PERSONAL PAGE

Robert Stevens has been elected president of Baldwin Mfg. Co., Elk Mills, Md., to succeed his father, **Albert Stevens**, recently resigned. **John Stevens** has become general manager, succeeding **John Lawrence**, resigned.

Alfred C. Pate of New Bedford, Mass., has been appointed in charge of the cotton manufacturing operations of Taber Mills, Inc. Mr. Pate was formerly treasurer of Charlton Mills, Fall River, and previously general superintendent of Soule Mill, and of Dartmouth Mills, both of New Bedford.

S. M. Butler, assistant secretary and treasurer of Carlton Yarn Mills, Inc., and Nuway Spinning Co., Inc., both of Cherryville, N. C., has been elected mayor of Cherryville.

Cason J. Callaway, former president of Callaway Mills at LaGrange, Ga., was awarded the honorary degree of Doctor of Law by the Presbyterian College at Clinton, S. C., at commencement on June 5.

A. H. C. Brown, vice-president of James Talcott, Inc., who is in charge of the Boston office of that organization, has been elected president of the Naushon Mills, formerly the Dartmouth Mills, of New Bedford, Mass. Mr. Brown succeeds **Ralph C. Perkins**, who has retired.

Claude L. Wyrick has become manager of Lola Mills, Stanley, N. C., succeeding the late I. E. Craig.

C. A. Cannon, president of Cannon Mills, Concord, N. C., and **C. A. Rudisill** of Cherryville, N. C., president of Carlton Yarn Mills, have been initiated as honorary members of the North Carolina State College chapter of Phi Psi, textile fraternity.

W. J. Trotter, Sr., has been elected president of the Monticello (Ark.) Cotton Mills Co., succeeding the late C. T. Harris.

Samuel Oshansky is now sales manager of the Ameritex Division, Cohn Hall Marx Co., New York. **Miss Hope Skillman**, who has been for five years fashion director of this division, has been appointed to direct sales promotion as well as styling.

Benjamin A. Levinson has resigned as vice-president and director of Mallinson Fabrics Corp., New York. He has also resigned as general sales manager of the greige goods division of National Fabrics Corp.

David W. Anderson has been appointed vice-president and treasurer of the Monarch Mills, Union, S. C., succeeding Emslie Nicholson, who retired early in May because of his health. Mr. Nicholson's death is recorded in the obituary columns. Mr. Anderson is president of the Pacolet Mfg. Co., Spartanburg, S. C.

C. P. Shoemaker has been appointed manager of the Nitro, W. Va. plant of American Viscose Corp. This plant produces viscose processed staple fiber. Mr. Shoemaker comes from Parkersburg, W. Va., where he was assistant manager.

W. V. Jarrett of Manchester, Tenn., is the newly-elected vice-president and secretary of the Lebanon (Tenn.) Woolen Mills.

J. M. McNutt has been appointed president of Golden Belt Mfg. Co., Durham, N. C., succeeding the late George W. Hundley. He was formerly vice-president.

P. P. Murphy has resigned as superintendent of the Peerless Mill, Lowell, N. C., after serving in that capacity for 32 years. He will devote his entire time to his duties as president of the United Spinners Corp. of Lowell, a position to which he was elected the first of the year when he, **Coit M. Robinson** and others purchased the plants of the United Spinners Corp.

Baron Groves, formerly of the Oakboro (N.C.) Cotton Mills, has succeeded Mr. Murphy as superintendent of the Peerless Mill.

Ward H. Bushee has been named general superintendent of the five divisions of the American Yarn & Spinning Co., Gastonia, N. C. Mr. Bushee has been with the American Yarn & Spinning Co. since the first of the year. He was assistant agent of the American Thread Co. in Holyoke, Mass., and superintendent of manufacturing at the Merrick division there at the time of the closing of that unit in January, 1938.

L. G. Moss has resigned his position with Marshall Field & Co., and has become assistant superintendent of Monaghan plant of Victor-Monaghan Co., Greenville, S. C.

Colonel Harry Price has been appointed yarn sales manager of Celanese Corp. of America, New York. He succeeds **Truman P. Handy**, who was recently named chairman of Celluloid Corp., a Celanese affiliate. Colonel Price has been with Celanese since 1926.

Albert Tilt has succeeded **E. W. Walters** as president of the Phoenix Silk Mfg. Co., New York. This business was established by Mr. Tilt's grandfather in 1824.

W. Ray Bell was re-elected treasurer of the Textile Export Association of the United States at the annual meeting early in May. **Frank H. Hillery** was re-elected president and **Frederick A. Colt** re-elected secretary.

Photo by courtesy of Daily News Record

FIFTY YEARS OF SERVICE: Hobart VanDoren's 50th anniversary of his association with Pacific Mills, in the New York office, is marked by a celebration which the entire personnel attended. Left to right: Fessenden S. Blanchard, Fred W. Steinmeyer, Mr. VanDoren, Dalton Francis and W. O. Jelleme.

Arthur J. Weisberg has joined the New York sales staff of Norman Finishing Co. He was formerly sales manager for Trio Dye Works and the Kapo Dye & Print Works.

H. Clyde Moore, president of the Boston Wool Trade Association, announces that the following have been elected honorary members of that Association: **Franklin W. Hobbs**, president of Arlington Mills, **Nathaniel Stevens**, head of M. T. Stevens & Sons, and **Alexander Livingstone**, formerly head wool buyer for American Woolen Co.

S. B. Roberts, chief engineer for Celanese Co. of America, has moved from Cumberland, Md., to Pearisburg, Va., to look after the construction of the new Celanese plant near that town.

Norman Levinson, in charge of industrial silk thread division of Belding Heminway Co., New York, for a number of years, has resigned.

John G. Jackson, a director and legal adviser of American Viscose Corp., Wilmington, Del., has been elected vice-chairman of that corporation, a newly established office. Other officers were re-elected at recent annual meeting.

Garnett C. Robey, Atlanta (Ga.) representative of the Riverside & Dan River Cotton Mills, has been elected president of the newly formed Atlanta Textile Club. **Robert A. McKay**, representing Wellington Sears Co., is vice-president. The club will hold luncheons on the first Monday of each month and will be glad to have visiting salesmen from other markets join in these luncheons.

E. C. Wilson, general sales manager of Munsingwear, Inc., Minneapolis, Minn., since 1934, has been named vice-president in charge of sales and merchandise.

Max Rosenthal has resigned from National Rayon Dyeing Co., Newark, N. J., to accept position as president of X-L-O Yarn Processing Corp., New York.

Henry S. Pepper is in charge of new retail sales department of Eichmann & Hecht, New York. He was formerly in charge of a similar department for Wahnetah Silk Co.

Louis J. O'Brien, formerly of Duplan Silk Corp., is now associated with the rayon women's wear division of Pacific Mills, New York.

William O'Shaughnessy has joined the greige goods department of William Whitman Co., New York, to assist in merchandising the spun rayon from Nonquitt Mills and the rayon dress goods of Marshall Field & Co. He was recently with National Dyeing & Printing Co. and previously with Cheney Bros.

Arthur M. Grimes, has become sales manager for Rhode Island Fabrics Co., New York. He was until recently with Deering Milliken & Co.

Frank Holden, of New Bedford, Mass., has become assistant superintendent of Brookside Mills, Knoxville, Tenn., with **Arthur Emery**, formerly manufacturing agent of the Wamsutta Mills as general manager. Mr. Holden was for 15 years on the faculty of the

CLINTON STARCHES

For All Textile Purposes

Manufactured by

CLINTON COMPANY

CLINTON, IOWA

Quality « » Service

WHITMAN *Yarns*

MONOMAC SPINNING CO.
LAWRENCE, MASS.

ARLINGTON MILLS
LAWRENCE, MASS

NONQUITT MILLS
NEW BEDFORD, MASS.

INGRAM SPINNING CO.
NASHVILLE, TENN.

CRAMERTON MILLS
CRAMERTON, N. C.

TALLAPOOSA MILLS
TALLAPOOSA, GA.

WILLIAM WHITMAN COMPANY, INC.
NEW YORK BOSTON PHILADELPHIA CHARLOTTE

New Bedford Textile School and more recently with the Kilburn Mill.

F. L. Asbury, Jr., has resigned as general superintendent of Gossett Mills, Anderson, S. C.

John T. Mercer, for the last 23 years agent of Arlington Mills, Lawrence, Mass., and with the mill for 39 years, has retired at his own request. He has been succeeded by his brother. **J. Sime Mercer,** formerly assistant agent for eight years, and the office of assistant agent has been discontinued.

Clarence L. Cutler, in charge of dyeing at Arlington Mills, Lawrence, Mass., for the last several years, has resigned. He has been succeeded by **Fred Lloyd,** formerly with Assabett Mills of American Woolen Co., Maynard, Mass.

Paul de Hagara, associated with the Eagle Rock Hosiery Mills, Singac, N. J., since its inception, has been elected president. **John A. Mueller** was re-elected treasurer and **Adele Mueller,** secretary.

W. H. Lawrence, Jr., resigned his position as president and manager of Blue Ridge Woolen Co., Chambersburg, Pa., when he purchased the Brucetown Woolen Mills, at Clearbrook, Va., in April. Mr. Lawrence has organized the Clearbrook Woolen Co., Inc., of which he is president to operate this plant. It will manufacture better-grade women's sportswear.

Clifford L. Cann, for over 20 years manufacturing superintendent of Cosmas Imperial Mills at Yarmouth, N. S., retired from active service May 15. He was associated with the mill for 44 years, starting service when it was the Yarmouth Cotton Duck Co. He will be succeeded by **William Brown,** who until recently was assistant superintendent at the Hamilton Imperial Mills.

Edward F. Addiss has resigned as treasurer of Burlington (N. C.) Mills Corp. **W. S. Coulter,** secretary of the company, has been made acting-treasurer. Previous to his Burlington connection Mr. Addiss was associated with Meinhard, Greeff & Co. for 25 years.

Graeme G. Whytlaw, representative of American Viscose Corp. at Providence, R. I., is in charge of the annual meeting of the Rayon Yarn Peddlers Association of New England, which will be held June 9 at New Bedford (Mass.) Country Club.

Herbert E. Martin has been promoted to assistant general manager of Celanese Corp. of America at Cumberland, Md.

William R. Rietheimer is president of the Chicago Yarn Men's Circle which will hold its annual outing for the knitting industry of the Middle West at the Barrington Hills Country Club, near Barrington, Ill., on June 22. **O. J. Caron** was re-elected secretary.

L. A. Graybill, formerly with Bibb Mfg. Co., Macon, Ga., has accepted a position with Morgan Cotton Mills, Laurel Hill, N. C.

S. W. Rabb has been promoted from superintendent of Erlanger Cotton Mill, Lexington, N. C., to general manager.

John E. Smith, formerly with Mills Mill, Woodruff, S. C., plant, has become assistant superintendent of Laurens (S.C.) Cotton Mills.

C. L. Liles has become overseer of carding at Henrietta Mills, Cherokee Falls, S. C., plant.

J. H. Smith, formerly with a mill at Waxahachie, Tex., has become overseer of weaving at Mexia (Tex.) Mills.

H. W. Newsome has become overseer of carding at New Braunfels (Tex.) Cotton Mills.

W. H. Darby is now overseer of carding and spinning at Kenneth Cotton Mills, Walhalla, S. C.

B. S. Howard has become superintendent of the woolen mill of Marshall Field & Co., Spray, N. C.

Albert L. Ford, who has been overseer of weaving at Swift Mfg. Co., Columbus, Ga., has resigned.

D. W. Shelton, formerly with Woodside Cotton Mills, Greenville, S. C., has become overseer of carding and spinning at Wallace Mfg. Co., Jonesville, S. C.

James D. Orr, formerly with Callaway Mills, LaGrange, Ga., has become associated with the testing department of the Stark plant of United States Rubber Products, Inc., Hogansville, Ga.

Walter Dillard, Jr., vice-president and general manager of New Braunfels (Tex.) Cotton Mills, has been elected vice-president of the Texas State Manufacturers' Association.

E. J. Powell, formerly with Highland Park Mfg. Co., Rock Hill, S. C., has become overseer of spinning at American Spinning Co., Greenville, S. C.

D. H. Kennemur, formerly with Union Bleachery, Greenville, S. C., has become second hand in dyeing at Renfrew Bleachery of Brandon Corp., Travelers Rest, S. C.

Marshall C. Stone, for five years superintendent of the Pacolet Mfg. Co., plant No. 4, New Holland, Ga., has been promoted to vice-president.

J. L. Rhinehardt, formerly overseer of a department of Clover (S. C.) Spinning Co., and more recently of Union, S. C., has become overseer of spinning, spooling, warping and twisting at Chronicle Mills, Belmont, N. C.

C. M. Putnam has become overseer of carding and spinning at the Poe Mfg. Co., Greenville, S. C. He was formerly with Wallace Mfg. Co., Jonesville, S. C., in a similar capacity.

Mrs. Ragnhild Johnson Roberts, for the last five years personnel manager of the Kendall Mills division of Kendall Co., Walpole, Mass., has been appointed supervisor of the graduate course in personnel administration at Radcliffe College, Cambridge, Mass. She is to take office July 1.

L. W. Green has been promoted to overseer of carding and spinning at the No. 1 and No. 3 plants of Highland Park Mfg. Co., Charlotte, N. C.

J. C. McPherson has become designer at Seminole Mills, Clearwater, S. C.

Ed Harmon has become overseer of carding at Sibley-Enterprise Mfg. Co., Augusta, Ga.

B. S. Howard is the new superintendent of the Spray (N. C.) Woolen Mill.

Daniel F. Zimmerman is retiring June 1 as warping foreman of William Skinner & Sons, Holyoke, Mass., to take a position as assistant to the plant manager of American Viscose Corp. mill at Lewiston, Pa.

R. K. Patrick, formerly superintendent and manager of Cayuga Linen & Cotton Mills, Lexington, N. C., has accepted a similar position with a mill at Englewood, Tenn.

W. C. Frazier, formerly of Opp, Ala., has become overseer of weaving at the No. 3 plant of J. W. Sanders Cotton Mills, Meridan, Miss. **J. W. Moore,** formerly of Prattville, Ala., has become overseer of carding at the same unit, and **W. F. Gaston,** formerly of Laurens, S. C., is now overseer of the cloth room of the No. 3 mill.

W. B. Massey has become overseer of the cloth room at the Victor plant of Victor-Monaghan Co., Geer, S. C., having been promoted to this position from that of second hand in the same department at the Monaghan plant of the company at Greenville, S. C.

J. B. Reeves has resigned as overseer of the cloth room at Jackson Mills, Iva, S. C., and has accepted a similar position with the Piedmont (S.C.) Mfg. Co.

Bentz S. Howard has been appointed superintendent of Spray (N.C.) Woolen Mill. For several years he was director of designing in the Spray office of Marshall Field & Co.

J. R. Brown has resigned as superintendent of Stonewall (Miss.) Cotton Mills, Inc., to accept a similar position with J. W. Sanders Cotton Mills at Meridan, Miss.

W. A. Parrish has resigned as overseer of the weaving department of the Eureka plant of Springs Cotton Mills, Chester, S. C.

Fred Keistler has resigned as overseer of weaving at both the No. 1 and No. 2 weave rooms of the Gayle plant of Springs Cotton Mills, Chester, S. C. Mr. Keistler did not announce his future plans.

Cal Duncan, superintendent of Gossett Mills, Pendleton, S. C., has been transferred to Anderson, S. C., as superintendent of Riverside plant of the same company.

C. J. Ashmore of Burlington, N. C., has been elected manufacturing superintendent of Cutter Mfg. Co., Rock Hill, S. C.

Brantley E. Jordan, Jr., has resigned as superintendent of the electrical department of Jackson Mill, Iva, S. C., which position he has held for four years, and has become associated with Duke Power Co., Anderson, S. C.

Mason Studdard has resigned his position with Eagle & Phenix Mills, Columbus, Ga., and has accepted a position with the bleaching department of Werthan Bag Corp., Nashville, Tenn.

J. S. Baker has become overseer of dyehouse at Anchor Mills, Huntersville, N. C., succeeding **H. Troutman,** who resigned to accept a position at Statesville, N. C.

Frank S. Dennis, formerly superintendent of Granite Cordage Co., Granite Falls, N. C., has become general superintendent of Sibley-Enterprise Mfg. Co., Augusta, Ga.

T. Moore, formerly with Watts Mills, Laurens, S. C., has become overseer of the ravon staple carding at Aragon-Baldwin Cotton Mills, Rock Hill, S. C.

C. J. Meagher is the new superintendent of Queen Ann Mills at Ellenboro, N. C.

C. W. Young has been transferred from the superintendency of Goodyear Fabric Corp., Devon Mills, New Bedford, Mass., to the superintendency of Goodyear Decatur (Alabama) Mills, the New Bedford mill having been closed indefinitely. **W. E. Floyd** has been transferred from the superintendency of Goodyear Decatur (Ala.) Mills, to another position at the Goodyear Clearwater Mills, No. 3, Atco, Ga.

Ernest Defore has become overseer of carding at Manchester, Ga., plant of Callaway Mills.

George P. Few is now assistant superintendent of Pickett Cotton Mills, High Point, N. C.

John O'Haire, in charge of finishing department at Chicopee (Mass.) Mfg. Corp. for many years, has resigned.

C. E. Ware has become superintendent of the Abernathy-Houser Mfg. Co., Statesville, N. C.

John E. Smith has resigned as mechanical supervisor and general overseer of the weave room at Mills Mill, Woodruff, S. C., to accept a position as assistant superintendent of Laurens (S. C.) Cotton Mill.

George L. Reid, Plymouth, Mass., overseer for 14 years of the weaving department of Puritan Mills in that town, has joined the Pascoag Worsted Mills, Pascoag, R. I.

John H. Damon, plant engineer of the Plymouth (Mass.) Cordage Co., has resigned after serving 55 years. He has been retained as a consultant in mechanical matters.

John Catyerall, plant superintendent of Naushon Mills, New Bedford, Mass., who is supervising rearrangement of the machinery in that plant, which occupies the former Dartmouth Mill, also took an active part in preparations for starting the Dartmouth Mill back in 1896.

James Dolphin, Maryville, New Brunswick, a graduate of N. C. State Textile School, has been appointed superintendent of the Ontario Mills, Canadian Cottons, Ltd., Hamilton, Ontario.

Ernest Rhettberg is superintendent and manager of the new Aberdeen (N. C.) Hosiery Mills.

R. A. Groves has become superintendent of the new Elizabeth James Mills, No. 2, Marion, N. C.

I. B. Garner, formerly with Excelsior Mills, Union, S. C., where he was an overseer, is now overseer of the cloth room of Brandon Corp., Woodruff, S. C.

James Metcalfe has been named assistant superintendent of the entire plant of Wamsutta Mills. New Bedford, Mass. Mr. Metcalfe for some time had been overseer of weaving. He started work 28 years ago as sweeper boy in the weave room.

Shannon Hosiery Mills, Columbus, Ga., reports the following additions to its sales staff: **G. M. Hicks,** formerly with Allen-A Co., will cover Georgia, Florida and South Carolina; **V. H. Scanland,** for many years with Marshall Field & Co., will cover North Carolina, Virginia and West Virginia; **E. M. Kerger,** formerly with Allen-A Co., will cover Texas; **George W. Threadgill,** previously with Vanette Hosiery Mills, will cover Alabama, Mississippi and Tennessee.

James Jackson has been appointed night overseer of spinning at Springstein plant of Springs Cotton Mills, Chester, S. C.

A. J. Morse, formerly of Newark, N. J., has become general superintendent of the North Georgia Processing Co., Toccoa, Ga. Mr. Morse was in Toccoa in the fall of 1937 to get the plant into operation, after which he returned to the main plant of Clark Thread Co. in Newark for several months. **Henry G. Bartol, Jr.,** who was in charge of the plant while Mr. Morse was in Newark, has been made assistant to Mr. Morse. **E. C. Shaw** has become superintendent of the mechanical department of North Georgia Processing Co.

W. F. Smith has become assistant superintendent of Moultrie (Ga.) Cotton Mills.

T. R. Morton formerly overseer of carding, spinning and twisting with Monticello (Ark.) Cotton Mills, is now general overseer of carding, spinning and twisting at Minnetonka Rug Co., Minneapolis, Minn.

Hines S. Richardson, formerly assistant overseer of weaving at Blue Ridge Mill, Alta-Vista, Va., plant of Burlington Mills, has become associated with S. Slater & Sons, Slater, S. C.

Obituary

William Clifford Stevens, 55, vice-president in charge of engineering of Cutler-Hammer, Inc., Milwaukee, Wis., died May 15.

James T. Royle, 63, president of the Ankokas Mills, Mount Holly, N. J. died May 16.

Edwin A. Bregenzer, 62, president of the Bethlehem (Pa.) Silk Co., and for many years associated with Robert B. Klotz in the Klotz & Bregenzer Silk Mills, Allentown, Pa., died at Allentown May 10.

Frederic Meril Waterbury, 83, a partner in the old firm of Tatum, Pinkham & Greey, New York, died May 10. He retired in 1933 after more than 40 years in the commission house business.

George B. Cooke, 70, for many years salesman with A. D. Julliard & Co., New York, died May 12.

Elias G. Fatta, 36, president of George B. Fatta & Sons, Amsterdam, N. Y., died as the result of an automobile accident on May 10.

Arthur Darnbrough, 60, vice-president and treasurer of the Quaker Lace Co. and vice-president of the International Lace Co., Philadelphia, died May 8. He was with first-named company for almost 60 years.

Charles S. Pillsbury, a di-

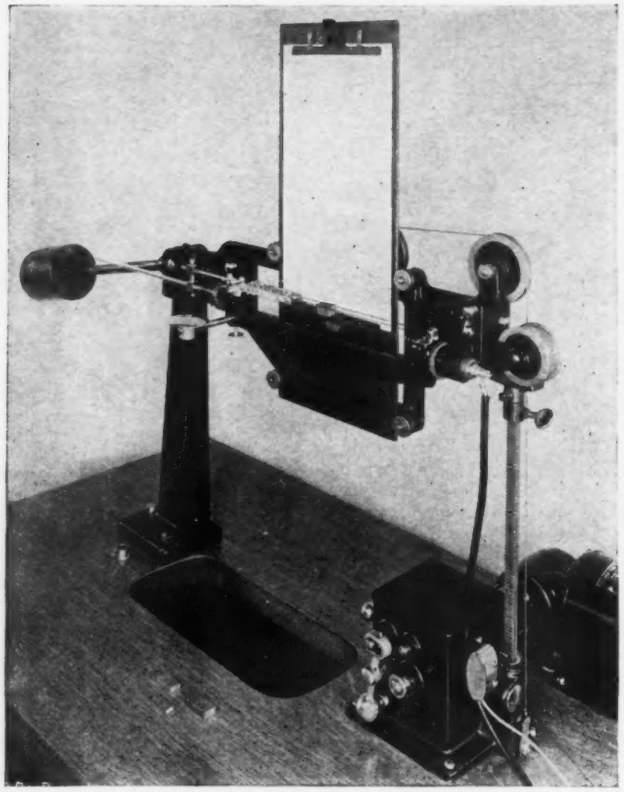


Illustration shows an attachment as applied to a standard SCOTT "Incline Plane" Tester, for determining accurately the load-elongation relation of rayon fibres and such minute specimens of other materials. Records the stress-strain curve automatically on rectilinear coordinate ruled graph forms, measuring 10" in load and 6" in the stretch direction.

Conforms to the accepted A.S.T.M. specification for rayon of "4 grams per denier per minute."

Scott Testers will be shown at the American Society for Testing Materials Convention, Haddon Hall, Atlantic City, June 26 to 30.

HENRY L. SCOTT CO.

101 Blackstone St. Providence, R. I.

rector of Munsingwear, Inc., Minneapolis, Minn., died last month.

Dr. E. W. Phifer, 62, prominent physician, president of Morganton (N. C) Full-Fashioned Hosiery Mills, vice-president of Alpine Cotton Mills, a director of the Ross Fabrics, Inc., and a director of the Dacotah Cotton Mills, Lexington, N. C., died recently.

W. M. Ratcliffe, Sr., 69, president of Guadalupe Valley Cotton Mills, San Antonio, Texas, died recently.

William L. Greene, 86, treasurer and general manager of Woonsocket (R. I.) Napping Machinery Co., died in that city May 8. With his father he founded the napping company 40 years ago and became its general manager in 1924.

Thomas Edward Brayton, 95, former treasurer of the Union Cotton Mfg. Co., Fall River, Mass., and for many years a prominent director of textile mills in that city and New Bedford, died in Fall River May 10.

Walter B. Graham, secretary and treasurer of Vass (N. C.) Cotton Mills Co., died May 16.

Alfred W. Martin, 75, manager of Everlastic, Inc., Chelsea, Mass., until his retirement 20 years ago, died in Chelsea, Mass., May 10.

C. L. Proctor, Sr., for a number of years one of the superintendents of the Florence Mill at Forest City, N. C., died recently.

James C. de Gruchy, Jr., 32, textile chemist at Goodall Worsted Co., Sanford, Me., was drowned in Sebago Lake, May 19, when a motorboat capsized.

Richard Howarth, 75, superintendent of Seabright Woven Felt Co., Camden, Me., for 35 years, before retirement a few years ago, died recently.

Leon Knappenberger, 39, foreman in the finishing department of Berkshire Knitting Mills, Reading, Pa., died May 17 from an automobile accident.

Edwin R. Bullock, 79, a prominent engineer identified with the textile mill and other industrial fields, died at Moline, Ill., on May 19.

William T. Seabury, 72, for many years member of Seabury & Cushman, Boston, Mass., died in North Weymouth, Mass., May 17.

Peter H. O'Neill, 80, for many years a foreman in Merrimack Mills, Huntsville, Ala., died May 12.

Harry W. McLean, 55, salesman with Federated Textiles, Inc., New York, died as the result of an accident on May 5.

Edward E. Partain, 48, owner of Par-Tex Hosiery Mills, Dallas, Tex., died early last month.

Emslie Nicholson, 76, a leader in the industrial development of South Carolina, died in Florida, May 22. He was born in Union, S. C. and organized the Excelsior Knitting Mills there in 1896. He had served as vice-president and treasurer of the Monarch Mills from 1907 until he resigned that office a few weeks before his death. He organized the Nicholson Bank & Trust Co. and was president of the Bank of Buffalo at the time of his death. His son, William Shephard Nicholson is treasurer of the Excelsior Mills and of the Darlington Mfg. Co.

David R. Barrows, 76, a retired woolen and knit goods manufacturer, died in Philadelphia last month.

John J. Buckley, 49, salesman with Johnson & Bassett, Inc., since 1915, died in Worcester, Mass., May 28.

Frederick J. McCormack, credit manager for William L. Barrell Co., New York, died May 2.

Burns A. Robie, 65, president of Whitehall Knitting Mills, Philadelphia, died May 1.

Alexander F. Crichton, 60, owner of Wilmington (Del.) Jute Mills, died recently.

J. F. Donaldson, 66, who retired two years ago after 50 years service with the Hardwick Woolen Mills, Cleveland, Tenn., died May 2.

Arthur Brooksbank Ball, 76, former secretary of the Silk Association of Great Britain and Ireland, died recently according to advices from abroad.

Morris Dannenbaum, 81 for more than 50 years head of the L. Dannenbaum Son & Co., Philadelphia, died at Atlantic City, May 2.

Walter B. Graham, 60, secretary-treasurer of Vas Cotton Mills Co., Spartanburg, S. C., died May 16.

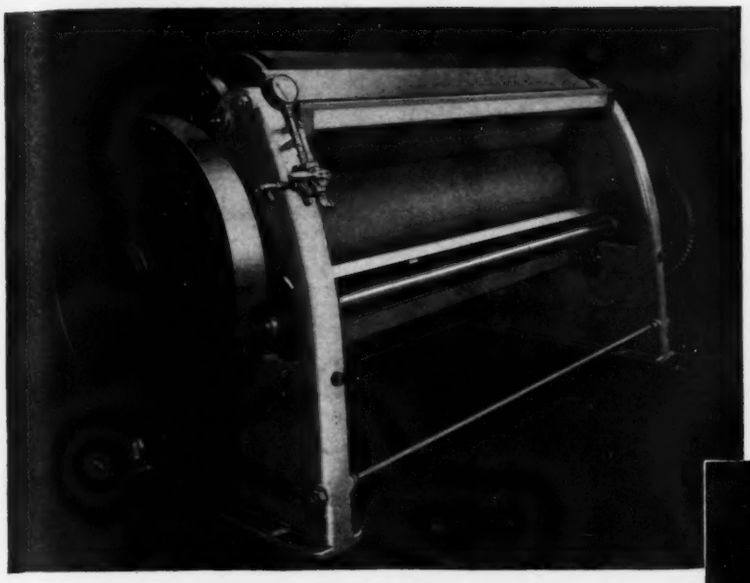
Thomas Earl Sharpe, 44, textile chemist with E. I. du Pont de Nemours & Co., died recently in Buffalo, N. Y.

Harry S. Skerrett, 70, president of the wool firm bearing his name, died in Philadelphia May 21.

George Carter Miller, 64, president of Dodge Mfg. Corp., Mishawaka, Ind., manufacturers of power transmission equipment, died May 10. He was at one time president of the Pilliston Manufacturing Corp., Pittsfield, Mass. He joined the Dodge Corp. in 1923.

C. L. Proctor, Sr., for a number of years superintendent of the spooling department of Florence Mills, Florence City, N. C., died May 6.

Will F. Ivey, for many years overseer of spinning at Entwistle Mfg. Co., Rockingham, N. C., and more recently with a mill at St. Pauls, N. C., died recently.



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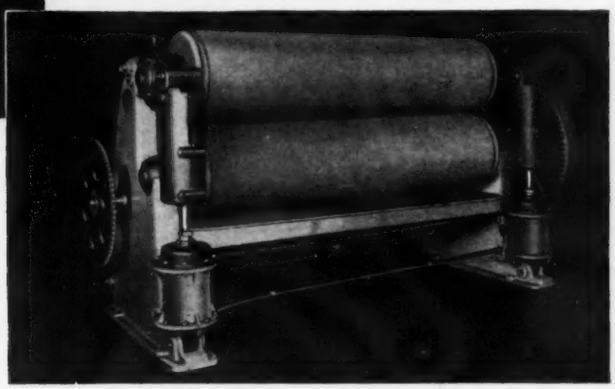

JAMES HUNTER MACHINE CO. Hunter NORTH ADAMS, MASS.

THE photos on this page illustrate the new Hunter Hydraulically Controlled Squeeze Rolls (patented). It offers new and definite economies to any mill operating press rolls, mangles, bleach lines, caustic baths — in fact in any range where moisture extraction from cloth is required.

This new patented unit is simple in operation and costs little to operate. It is adaptable to any finishing range . . . and on a wide variety and width of fabrics. 5 h. p. will operate it and it has practically no wearing parts.

The Model "G" Squeeze Rolls have extracted lace at 40 yards per minute to 68% moisture content on the dry basis, knit goods at 20 yards per minute to 50% moisture content on the dry basis, 26-ounce low grade wool felts at 20 yards per minute to 55% moisture content on the dry basis, cotton plushes at 20 yards per minute to 47.5% moisture content on the dry basis, 100% rayon at 40 yards per minute to 50% moisture content on the dry basis, and mohair plushes at 20 yards per minute to 36% moisture content on the dry basis.

Any interested mill man can get complete details, and without obligation of any kind by mailing the coupon.

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Mill.....

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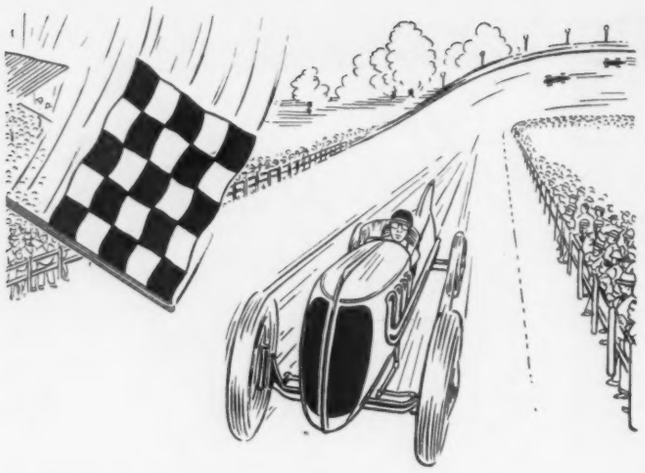

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... with seconds to spare!

"Race" after "race" . . . and against all comers, here is a product for Wetting-Out, Sanforizing and Softening which can be depended upon for constantly superior performance:

SURFAX W.O.

Proven in production by mills everywhere, SURFAX W.O. wets out faster, costs less, can be used in lower concentrations . . . and perform more satisfactorily and economically than other "wetting-out" agents.

For Sanforizing, SURFAX W.O. is the fastest and most suitable product on the market today . . . and for use as a softener it is unsurpassed.

Strong claims, those — but you can prove them yourself by either Draves Test or on an actual production basis. We will gladly furnish a trial quantity for such test. Write, or call the Houghton Man. There is one nearby.

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MILL NEWS

Cotton Mill News

Avondale Mills are modernizing plants at Avondale and Cowikee, Ala., at a cost of more than $500,000. All plants of the company are being equipped with long-draft roving.

Birmingham (Ala.) **Textile Co.** is negotiating for the lease of its cotton mill to the Sanders interests, operators of six mills in Mississippi. The mill was operated from 1931 to 1936 by the Selma (Ala.) Mfg. Co.

American Thread Co., Willimantic, Conn., will sell mill property at Stonington. All machinery has been moved to Holyoke, Mass.

Southern Mills, Inc., Atlanta, Ga., have awarded general contract to Van Winkle & Watkins, Atlanta, for one-story addition, 90 x 100 ft.; cost about $45,000, with equipment. Hentz, Adler & Shutze, Atlanta, are architects.

Muscogee Mfg. Co., Columbus, Ga., has constructed two buildings in its $200,000 improvement program; in addition there will be a $30,000 water filtering system.

Callaway Mills, LaGrange, Ga., have established in the Western Merchandise Mart, San Francisco, Cal., western sales headquarters for the products of the company's rug mill, the Valway plant. R. M. Arnette is in charge.

Willingham Cotton Mills, Macon, Ga., are considering rebuilding of one-story warehouse at mill, recently damaged by fire.

Bibb Mfg. Co., Osprey Mill, Porterdale, Ga., will install 250 additional looms in the new addition which has recently been completed.

Whitin Bros., Linwood, Mass., employing 400, avoided closing by sale of its plant to Earl Liberty, its superintendent, for $16,000. There will be no change in the management. Included in the sale is the Saunders Cotton Mill at Saundersville, idle for several years, which it is not planned to reopen.

Locke Cotton Mills Co., Concord, N. C.—John W. Clarke, receiver, is arranging for the early sale of the Buffalo Mills unit of this company. The main Locke Cotton Mills unit will not be offered for sale at this time.

Robinson Yarn Mill, Dallas, N. C., has completed installation of additional equipment, including new roving machinery.

United Spinners Corp., Lowell, N. C., is dismantling its No. 1 plant. The machinery is being added to plant No. 2 and the mill building will be offered for sale.

Jennings Cotton Mills, Inc., and **Mansfield Mills, Inc.,** both Lumberton, N. C., associated, are completing a modernization and improvement program representing a total investment of close to $350,000, and will place new equipment and facilities in service in July.

Stowe Cotton Mills, Inc., McAdenville, N. C., formerly the McAden Mills, are scheduled to get into operation around Aug. 11. The mill buildings will be modernized and some new machinery installed.

Neuse (N.C.) **Mfg. Co.'s** properties have been purchased by a New York corporation.

St. Paul's Cotton Mill, St. Paul, N. C., has been placed in hands of John H. Small of Washington, N. C., as receiver, for liquidation.

Carter Mills No. 2, Taylorsville, N. C., have been acquired by W. Forrest Kincaid, Jr. Lincolnton, N. C., and associates, and will continue yarn manufacture.

R. J. Ederer Thread Co., Philadelphia, Pa., was damaged by fire recently. Company plans immediate rebuilding; official estimate of loss not announced.

Lonsdale (R.I.) **Co.** has arranged to borrow $1,024,000 for the dual purpose of refunding an RFC loan of $824,000 and expending $200,000 for new machinery to modernize its equipment.

Springs Cotton Mills, Eureka plant, Chester, S. C., is installing a new steam generator, of latest tubular type, capable of generating steam at a pressure of 800 lbs. per sq. ft. Heat will be furnished by pulverized coal. This boiler will furnish steam to one new high-pressure turbine, thence into the present condensing turbine.

Victor Monaghan Co., Greenville, S. C., reports net profit of $113,987 for fiscal year ended Mar. 31 compared with net profit of $370,879 in previous fiscal year.

Springs Cotton Mills, Lancaster, S. C., have installed 600 additional looms in the large weave room addition which was constructed to house this equipment. This unit of the company now has 7000 looms.

Eureka Mills, Englewood, Tenn., formerly Eureka Cotton Mills, acquired a number of months ago by C. L. Upchurch & Sons, Inc., Athens, Ga., have

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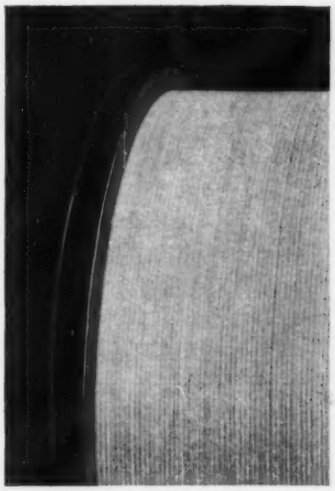
Section beams wound on the Barber-Colman SUPER-SPEED WARPER have even selvages, as shown in the photograph at the right. Accurate control of running threads on the warper produces low and uniform tension, which eliminates slack ends and prevents "high selvage" or "low selvage". This results in improved slashing and better running weaving.



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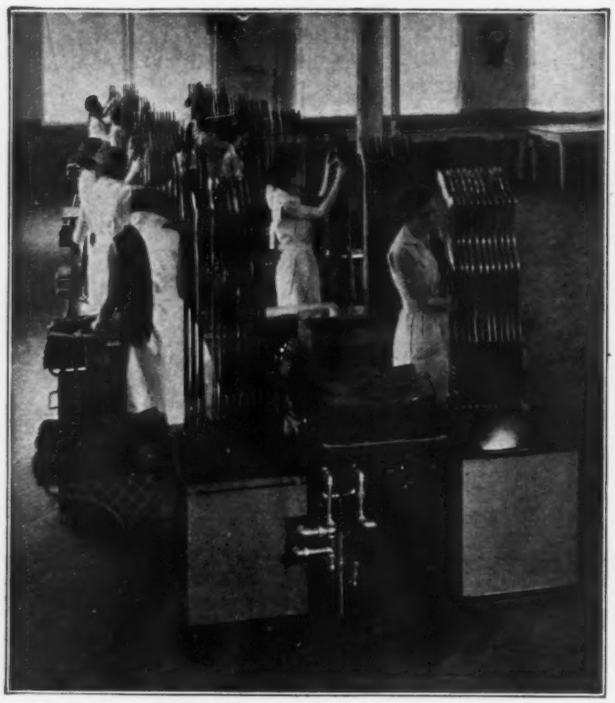

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MILL NEWS

completed installation of new equipment for spinning coarse yarns and begun production. A dyeing unit also will be operated.

Canadian Cottons, Ltd., reports net profit of $116,543 for fiscal year ended Mar. 31.

Wool Mill News

West Buxton, Me.—The woolen mill here, closed since the bank holiday in 1933, is to reopen under direction of Joseph Loper of Massachusetts, a mill operator at South Windham. Frank E. Lemson of East Wilton and Hampden has arrived to act as superintendent.

Alderman Top Mfg. Co., Inc., Holyoke, Mass., has been incorporated by Eugene R. Alderman, Robert H. Alderman and Dorothy A. Schade, for $100,000. This firm has leased the No. 3 mill of Farr Alpaca Co.

Livingston Worsted Mills has leased 20 looms from the Farr Alpaca Co. and set them up in the Cornwall Mills building on South Street, Holyoke, Mass. The looms are of 82-inch, worsted type.

Sidney Blumenthal & Co. reports net loss for first quarter of $39,648 compared with net loss of $285,648 for first quarter a year ago.

Amoskeag - Lawrence Yarns, Inc., has been organized in Manchester, N. H., for the manufacture of blended yarns of wool, rayon and cotton for knitting. Arthur E. Moreau is president of Amoskeag Industries, which formed the new concern, including absorption of Lawrence Mfg. Co. of Lowell, Mass. The company will occupy 150,000 sq. ft. in the Amory mill of former Amoskeag Co. Samuel P. Hunt is president of the new firm.

Cleveland Worsted Mills Co. reports net profit of $128,454 for first quarter, compared with net loss of $64,816 for first quarter a year ago.

James Lees & Sons Co., Bridgeport, Pa., has installed additional Giant Package mule equipment made by Johnson & Bassett, bringing their total of these mules to 16.

Davalin Worsted Mills, Philadelphia, Pa., have filed notice of organization to operate a mill at 4041 Ridge Ave. Edwin Satinsky heads company.

General Carpet Corp., Alva Division, Philadelphia, was sold at auction May 25. Sale included real estate, 24 looms and accessories.

Hightstown Rug Co. reports net loss for 1938 of $146,411, compared with net profit of $39,562 in 1937.

Clearbrook (Va.) **Woolen Co.** has been chartered with capital of $50,000 by William H. Lawrence, Jr., to operate lately acquired Brucetown Woolen Mills, Inc.

Staunton (Va.) **Worsted Mills, Inc.,** has effected reorganization. Charles H. Merriman, Jr., of Waynesboro and Charlottesville, Va, is president and treasurer, succeeding George Musgrave. W. E. Johnson was re-elected vice-president and Gilpin Wilson, Jr, was re-elected secretary.

Badger Worsted Mills, Grafton, Wis., have let contract to Louis Krause, Cedarburg, Wis., for one-story warehouse addition, 50 x 150 ft.; also awarded Automatic Sprinkler Corp. of America, Inc., Youngstown, Ohio, the sprinkler system installation. Cost close to $20,000.

Rayon & Silk Mill News

Clinton Silk Co. has taken space in the Hadley Mills, Holyoke, Mass., once used by the liquidated Jennings Silk Co. It will operate about 120 looms.

Riverside (N.J.) **Yarn Mills,** recently organized, are now producing spun silk, worsted and silk twists, etc. Company is headed by S. Scott Stewart, formerly with Clifton Yarn Mills, Clifton Heights, Pa.

Gloucester Plush Co., Camden, N. J., recently organized by Irvin M. Lichtenstein, Camden, and associates, with capital of 500 shares, plans early operation of a mill.

Fulton (N.Y.) **Silk Mills** were scheduled to be auctioned as a going concern on June 8 by RFC.

Celanese Corp. of America reports net profit for the first quarter of $1,336,714 compared with $114,275 for the first quarter of 1938.

American Enka Corp. reports net profit for 1938 of $1,020,373, compared with net of $2,517,539 for 1937.

Tubize Chatillon Corp. reports net profit for first quarter of $180,457 against $31,946 for similar period a year ago.

Belding Heminway reports net profit of $133,315 for the first quarter of 1939 compared with $75,406 in 1938.

Colonial Mills, Inc., Red Springs, N. C., operating at former local mill of Red Springs Weaving Co., for rayon production, have added about 40,000 sq. ft. of floor space to previous 54,000 sq. ft. About 400 looms are now in service. Karl Robbins is president.

Burlington Mills Corp.,

MILL NEWS

Greensboro, N. C., has let contract for addition to High Point Weaving Co., one-story, 100x150 ft. warehouse, costing about $15,000.

La France Industries, Philadelphia, Pa., are completing plans for reorganization under direction of Federal Court. It is proposed to secure a $600,000 loan from RFC.

Syntex Fabrics, Inc., Williamsport, Pa., has awarded contracts for addition estimated to cost about $20,000. Additional looms and equipment will be installed to double present output.

Atlantic Rayon Corp., Providence, R. I., formerly Franklin Rayon Corp., will take over former mill of Lawrence Mfg. Co., Lowell, Mass., including power plant and water rights, and will occupy for new branch throwing mill. Property totals 500,000 sq. ft. floor space. Initial facilities will be provided for about 400 operatives.

Century Ribbon Mills, Radford, Va., plan one-story addition, about 13,000 sq. ft. floor space. Cost estimated close to $25,000, with equipment.

American Viscose Corp. has awarded contract to Hungerford & Terry, Clayton, N. J., for a new filter plant at Roanoke, Va., with filter units of 2,800 gals. per min. capacity.

American Viscose Corp. has also let general contract to John P. Pettyjohn Co., Lynchburg, Va., for five one-story additions to mill at Nitro, W. Va. Cost reported over $100,000. Ballinger Co., Philadelphia, is architect.

Knitting Mill News

Shannon Hosiery Mills, Inc., Columbus, Ga., have completed construction of mill and will start up early in July. Nine 45-gauge machines have been installed and others will be added at early date. N. S. Illges is president, and W. T. Cochran, secretary and treasurer.

Oak Mfg. Co., East Point, Ga.—Machinery and equipment was sold recently at auction to a number of purchasers, the sale totaling $31,500. The mill buildings have not been sold.

Quitman (Ga.) Hosiery Mill has increased capacity and is now operating 12 knitting machines.

Eader Textile Corp., Highfield, Md., organized with capital of $50,000, has begun production of knitted underwear. John B. Eader is vice-president and general manager; William R. Miller, formerly connected with Waynesboro (Pa.) Knitting Co., is treasurer.

Tom Wye, Inc., Winchendon, Mass.—Machinery and equipment was recently sold at public auction.

Durant (Miss.) Mfg. Co. is installing six hosiery knitting machines to be completed in twelve weeks. There will be 85 workers, J. W. Norwood, superintendent, said.

Van Raalte Co., Dunkirk, N. Y., has awarded contracts for remodeling and improving a large building recently purchased from the American Locomotive Co. Company plans expenditure of $30,000 to $40,000 for adapting the building to silk textile production.

Perry (N. Y.) Knitting Co. will erect a three-story addition, 60x60 ft., with wing extension, 30x60 ft., instead of a two-story structure, as previously reported.

May Hosiery Mill, Burlington, N. C., has begun the construction of a three-story addition to cost at least $20,000.

Brown Hosiery Mills, Hickory, N. C., have installed 12 additional hosiery machines. Six will be used for full-fashioned hosiery, and six for seamless hosiery for men.

Henderson Hosiery Mill, Hickory, N. C., in receivership, will be sold.

Garrou Knitting Mills, Inc., Morganton, N. C., has completed an extensive building program, which gives the company much additional space.

Biltmore Hosiery Co., Naples, N. C., has added six full-fashioned machines and now has 18.

J. W. Cash, Shelby, N. C., has leased the LeGrand-Eskridge building on North Washington St., and will equip for knitting women's silk hosiery; initial capacity about 1,000 doz. pairs per week.

Carter Mill, No. 2, Taylorsville, N. C., has been purchased by W. Forrest Kincaid, Jr. of Lincolnton, N. C., from A. B. Carter, who has been operating the mill for 10 years. He will take over the mill about May 25. There are about 7,000 spindles.

Wrenn Hosiery Mills, Thomasville, N. C., will soon complete the construction of plant addition.

Friedman - Blau - Farber Co., Cleveland, Ohio, was sold at auction to a number of buyers on May 23, 24 and 25.

Lititz Springs Hosiery Mill, Lititz, Pa., was sold at auction of May 18.

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☐ Auto Elec. Technician	☐ Fire Bosses	☐ Steam Elec. Eng'ring
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☐ Aviation Engineering	☐ Heating	☐ Steam Fitting
☐ Boilermaking	☐ Heat Treatment of Metals	☐ Structural Drafting
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MILL NEWS

Rodgers Hosiery Co., Philadelphia, Pa., has sold its two-story mill at 335-51 East Price St., on site 160x174 ft., to the Molded Insulation Co., for $40,000.

Vaughan Knitting Co., Pottstown, Pa., is having plans drawn for new plant by A. S. Kepner.

Meinig Hosiery Co., Reading, Pa., in 77B proceedings has set Aug. 1 as final date for filing claims.

Chappells (S. C.) **Full-Fashioned Hosiery Mill Corp.** has been formed with capital of $10,000 to manufacture hosiery. J. L. Younts is president; E. M. Wilson, vice-president; and L. E. Werts, secretary-treasurer.

Roseglen Knitting Mills, Inc., Sumter, S. C., have been sold by John W. Clarke, receiver, to local interests, names temporarily withheld, which plan to operate. It was a unit in the chain of mills owned by Locke Cotton Mills Co.

Athens (Tenn.) **Hosiery Mills** has installed 12 machines for manufacture of men's hosiery, bringing total to 52.

Cumberland Mfg. Co., Crossville, Tenn., organized to operate a hosiery mill at Cumberland Farms Federal homestead project, has completed construction of one-story mill, 60x350 ft., and will proceed with installation of 300 Wildman single-head, single-unit machines. Production will begin July 1. Three similar plants will be ready at that time; a fifth, two weeks later. Dexdale Hosiery Mills, Lansdale, Pa., is interested in these companies and will be in charge of operations.

Franklin Fabrics, Inc., Elizabethton, Tenn., a new concern, has begun operations in manufacture of warp knit fabrics. Company is capitalized at $50,000. T. F. Tate is superintendent.

Se-Ling Hosiery Mills, Nashville, Tenn., have installed two new high-speed, fine-gauge, single-unit knitting machines at a cost of approximately $18,000 each.

Argus Hosiery Mill, Sevierville, Tenn., newly organized, has begun installation of full-fashioned hosiery machines in the building which formerly housed the old Sevierville Hosiery Mill, now thoroughly remodeled.

Marion Hosiery Mills, Inc., South Pittsburg, Tenn., is a new concern. Its officers are Fred Guerrant, president; R. A. Padgett, vice-president, and Alan S. Kelly, secretary.

Grayson Full-Fashioned Hosiery Mill, Independence, Va., has elected the following officers: Dr. J. C. Moxley, president; E. Scott Elliott, vice-president, and Bays M. Todd, secretary and treasurer. Building has just gotten under way.

Sale Knitting Co., Martinsville, Va., will erect five-story addition to mill, totaling about 17,500 sq. ft. floor space, for increased capacity. Knitting machines and accessory equipment have been bought from L. E. Harrower & Son, Amsterdam, N. Y.

National Hosiery Co., Richmond, Quebec, is erecting a $20,000 addition.

Processing Plant News

Southbridge (Mass.) **Finishing Co.,** and **Sturbridge Finishing Co.,** Fiskdale, Mass., associated companies, operated by Golding Brothers Co., New York, N. Y., are said to be considering removal to Spartanburg, S. C., where production might be consolidated. An RFC loan of $1,250,000 has been "conditionally" granted. Massachusetts senators have tried to block the loan.

Eagle Dyeing & Finishing Co., Mount Holly, N. J., recently organized with capital of $100,000, will operate a local mill. Allen S. Hatcher, Mount Holly, is head.

Chester Dyeing & Finishing Co., Paterson, N. J., organized with capital of 1,000 shares, under direction of John M. Ward, 160 Market St., will soon begin operations.

Blackmore Dye Works, Inc., Cold Spring, N. Y., recently organized with capital of 200 shares, plans operation of a local dyeing and finishing mill.

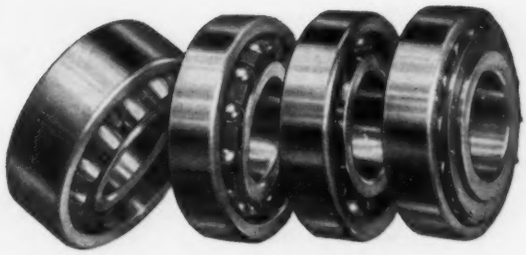
Alamance Dyers, Inc., Graham, N. C., will engage in dyeing and finishing textiles with capital of $25,000. Subscribers are Harper Barnes, W. F. Okey and Vera O. Swing, all of Graham.

Gillmore - Carmichael-Olson Co., Cleveland, Ohio, is constructing a plant at Wheeling, W. Va., for the manufacture of calico prints. It will be 50x60 ft., two stories.

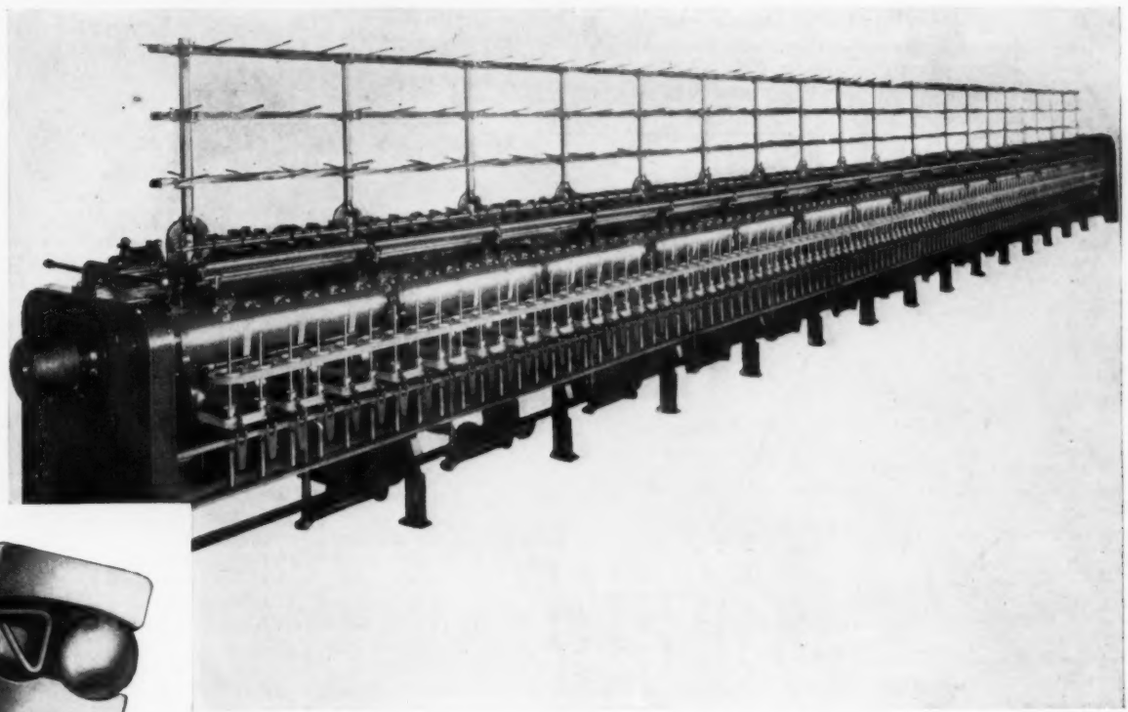
Bailey Dye Works, Philadelphia, has removed its plant to the Quaker Hosiery Building, 22d and Somerset Sts., where it occupies larger quarters.

Wm. G. Stoltz Sons, Inc., with plant in Glenside section of Reading, Pa., are about to build an addition to their power plant at a cost of $6,800.

Hartsville (S. C.) **Print & Dye Works,** under 77B proceedings since July 1, 1935, has been given until July 15 next to file a reorganization plan.



PROFITS FROM TWISTERS DEPEND ON GOOD BEARING PERFORMANCE ALWAYS



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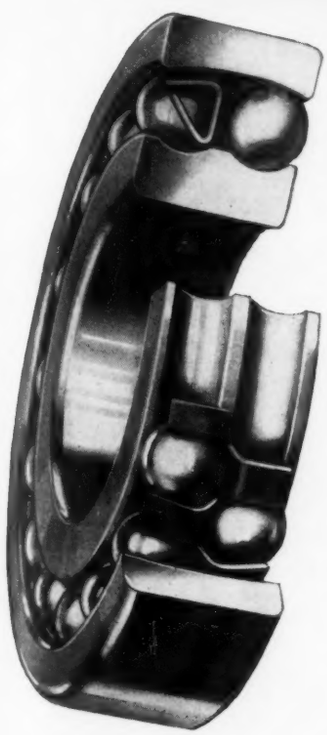

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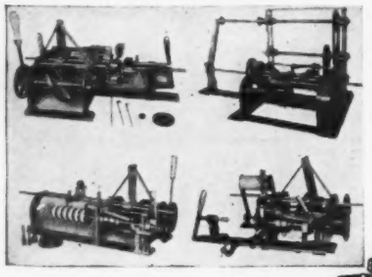
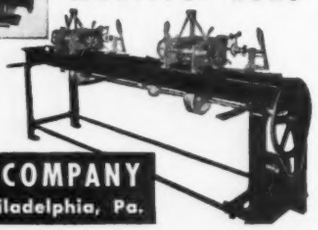


SPOOLING MACHINES

SINGLE END
DOUBLE END
CAM TRAVERSE
SCREW TRAVERSE

MULTIPLE HEAD



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Blending Feeder. Whitin Machine Works. Illustrated 4-page folder describes company's equipment for blending raw cotton before opening and picking processes.

Flexible Metal Tubing. American Brass Co. Catalog describes and pictures company's seamless flexible metal tubing; contains application, installation, and specification data.

Textile Machinery. Davis & Furb r Machine Co. 96-page general catalog contains information and illustrations of company's preparatory, carding, spinning and finishing machinery and supplies.

Valves. Crane Co. Pamphlet describes service characteristics of globe and gate valves; tells how to pick correct valves for particular installations.

Rug Manufacture. Standard Oil Co. May issue of *Esso Oilways* contains interesting article on production of American Orientals.

Vacuum Pump. Beach-Russ Co. Bulletin No. 72 pictures, describes, and lists applications of company's new Type RP high-vacuum pump.

Alloys. International Nickel Co., Inc. Revised Bulletin T-13 describes uses of nickel and nickel-base alloys in design of corrosion-resistant machinery and equipment.

Static Eliminator. U. P. M.-Kidder Press Co. Illustrated folder describes Chapman electric neutralizer for removing static electricity; includes data and photographs showing applications in the textile industry.

Water Treatment. Permutit Co. Bulletin No. 597, in 32 pages, describes and illustrates company's Zeolite water softening equipment; another booklet contains reprint of talk on "Removal of Iron and Hardness from Water."

Corrosion-Resistant Metal. Lukens Steel Co. Vol. 1, No. 3 of *Clad News* contains article on dyeing cotton yarn in Inconel-Clad steel equipment.

Electrical Equipment. Westinghouse Electric & Mfg. Co. Catalog section 75–030 describes company's air-cooled control and warp-stop loom transformers; Data Sheet 29–080 describes Type AB-20 Deion air circuit breaker; Pamphlet 31–132 contains data on small-plant and industrial d-c. switchboards; pamphlet 31–133 contains similar data for a-c. switchboards.

Water Treatment. International Filter Co. Bulletin No. 23–800 discusses methods and equipment for conditioning of water to meet textile plant requirements.

Variable-Speed Transmission. Ideal Commutator Dresser Co. Illustrated leaflet describes company's "Select-O-Speed" equipment in sizes up to 7½ hp.

Dyeing Equipment. Smith, Drum & Co. Catalog 174 illustrates and describes company's package-dyeing machine; includes data on floor space, weights, etc.

Rubber Products. Hewitt Rubber Corp. First issue of *Hewitt Magazine* contains front-cover illustration of circular loom in operation; includes data on company's personnel and products.

Office Machines. Burroughs Adding Machine Co. Pocket-size booklet contains 29 suggestions for locating and eliminating useless, costly operations that handicap office employees.

Shears. Hermas Machine Co. April issue of *Clothroom Spotlight* pictures a modern clothroom, and describes application of company's shearing equipment to seersucker fabrics.

Labeling. McLaurin-Jones Co. Booklet entitled "A Handbook of Informative Labeling" contains considerable information regarding data desired by consumers on labels, government regulations concerning labeling, etc.: included are numerous examples of informa-

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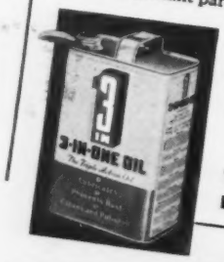

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(Continued from page 118)

tive labels, many referring to textile products.

Window Shades. Hough Shade Corp. Illustrated folder describes numerous of company's products developed to meet special needs in textile and other industries; includes data on shading for all types of office and factory windows, also monitors and skylights.

Sizing and Finishing. Stein, Hall & Co., Inc. 8-page leaflet contains reprint of article on sizing and finishing, originally published in TEXTILE WORLD.

Speed-Change Equipment. Allis-Chalmers Mfg. Co. Bulletin 1261-B describes company's Vari-Pitch Texrope sheaves, in types for both occasional and frequent speed changes; dimension and installation data are included.

Compressors. Ingersoll-Rand Co. Catalog 3063-A describes company's line of Type ES compressors in sizes from 10 to 125 hp. and pressures from 5 to 2500 lb.

Stroboscopes. General Radio Co. Illustrated folder describes two new items in company's line of stroboscopes, and shows how this equipment can be operated to apparently slow down or stop motion in textile and other processes.

Air Conditioning. Air Conditioning Manufacturers' Association. Twelve-page booklet describes non-technically the four elements to be controlled in air conditioning—temperature, humidity, cleanliness, and air motion.

Finishing Equipment. James Hunter Machine Co. April issue of *Hunter Counselor* illustrates several of company's machines and describes use of company's hydraulically controlled squeeze rolls in extracting moisture from cloth.

Diesel Engines. Worthington Pump & Machinery Corp. Bulletin S-500-B5E describes company's vertical four-cycle direct-injection diesel engines, known as Type B; Bulletin S-500-B36 describes similar engine in totally enclosed model, designated Type CC.

Weaving Equipment. Steel Heddle Mfg. Co. Four-page folder describes advantages of hard chrome plating of various loom supplies.

Readers interested in literature reviewed on this page may secure copies by writing to Textile World, 330 West 42nd St., New York, giving their company connection, title of item desired, and date of issue in which it was reviewed.

Electrical Connectors. Burndy Engineering Co., Inc. Leaflet describes company's "Qiklug" connectors; pictures show their applications, and various types available.

Chemists' Directory. Association of Consulting Chemists and Chemical Engineers, Inc. Fifth edition of *Directory of Association Members* contains about 50 pages listing consultants and telling types of work they are equipped to perform.

Laboratory Services. American Council of Commercial Laboratories. Booklet lists member laboratories, describes their functions, and shows numerous views of laboratory technicians at work.

Travelers. National Ring Traveler Co. 16-page booklet gives brief history of travelers and rings, and of the part this company has played in their development.

Rayon Staple. Courtaulds, Ltd. Handbook discusses cotton-mill use of viscose staple rayon; covers carding, spinning, weaving, knitting, finishing; includes numerous illustrations.

Measuring Equipment. Durant Mfg. Co. Catalog Section 6 gives data on several of company's measuring and counting devices; included are illustrations of applications to tenter frames, printing machines, etc.

Looms. Draper Corp. May issue of *Cotton Chats* pictures and describes Model X looms, including the new XD looms for heavy and wide rayons and cotton ducks.

Power Transmission Equipment. Link-Belt Co. 272-page handbook, No. 1600, contains design and application data, dimensions, weights, list prices, etc., of company's power-transmission units.